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Masuho, Y.  TITLE Full-length CDNA sequences JOURNAL Patent: EP 1147046-A 339 24-SEP-2003; Research Association for Biotechnology (JP) FEATURES Location/Qualifiers location/Qualifiers / regains="Homo sapiens" / mol type="unassigned DNA" / db_Xref="taxon:9606"	Query Match  73.6%; Score 1459.4; DB 6; Length 2178;  Best Local Similarity 96.4%; Pred; No. 1e-307;  Matches 1526; Conservative 0; Mismatches 1; Indels 56; Gaps  426 GGTGCCTGCAGGAGTCCTGGGGCCAGCTGGCCTCCATGTACGTCAGCACGGGAACGGT  1	Db 86 GGTGCCTGCAGGAGTCCTGGGGCCTCGATGTACGTCAGCAGGGGGAACGGT 145  QY 486 ACAAGTGGCTGCGCTTCAGCGAGGACTGTCTGTACGTGTACGTGAGCGCGGGGACGGT 145  Db 146 ACAAGTGGCTGCGCTTCAGCGAGGACTGTCTGTACCTGAACGTGTACGCGCGGGGGGG 545  QY 546 CGCCGGGGGATCCCCAGCTGCCAGTGATGGTTCCGGGAAGGCGCTTCATCGTGG 605  Db 206 CGCCCGGGGATCCCCAGCTGCCAGTGATGGTTCCGGGAAGGCGCCTTCATCGTGG 605  Db 206 CGCCCGGGGATCCCCAGTGACGATGATGGTTCCGGGAAGGCGCCTTCATCGTGG 605  CAN	606 266 666 702	Db   386 GACCGCAGCGCGAGAGCGGCGGGACCTGGCACGGACCACGCGCGCG	566 AGGACTGATGATCACCCCTAGCCTCGGGTCTCTTCCATCGGGCCATTTCCCAGAGTGG 910 CACCGCGTTATTCAGACTTTCATCACTAGAGACCGACTGAAAGTGGCCAAGAGTGG 626 CACCGCGTTATTCAGACTTTCATCACTAGTAACCCACTGAAAGTGGCCAAGAAGGTTGC 970 CCACCTGGCTGGATGCAACAACAGCACACAGAAGTGGCCAAGAAGGTTGC 970 CCACCTGGCTGGATGCAACAACAACAGAAGTGGCCACTAGGTTGC 970 CCACCTGGCTGGATGCAACAACAACAGAACGCCCAGAGGGCACT	DB 686 CCACCIGGCIGGAIGCAACCACACACACACACACACACAC
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TITLE NEDO human cDNA sequencing project JOURNAL Unpublished REFERENCE 2 (bases 1 to 2178) AUTHORS Isogai, T. and Yamamoto, J.  AUTHORS Direct Submission JOURNAL Submitted (04-510-2002) Takao Isogai, FLJ Project (HRI Team); 2-6-7 Kazusa-Kamatari, Kisarazu, Chiba 292-0812, Japan (E-mail:genomics@hri.co.jp, Tel:81-438-52-3986) COMMENT NEDO human cDNA sequencing project supported by Ministry of Economy, Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology (RAB); cDNA library construction: Helix Research Institute (HRI) (supported by Japan Ray, Technology CAB); cDNA library construction: Helix Research Institute (HRI) (supported by Japan Ray, Technology CAB); cDNA library construction:	HEI, and Biotechnology Center, National Institute of Technology and Evaluation, clone selection for full insert sequencing: HRI and RAB; annotation: HRI and RAB.  FEATURES 1. 2178 20urce /organism="Homo sapiens" // Organism="Homo sapiens" // AD xref="taxon:9606" // Clone="RASMH2011795" // Lissue type="hand"	/clone_Tib="BRAWH2"  /note="folining vector: pME18SFL3"  /note="unnamed protein product"  /note="unnamed pro	ORIGIN  Query Match Query Match Best Local Similarity 96.4%; Pred. No. 1e-307; Matches 1526; Conservative 0; Mismatches 1; Indels 56; Gaps 1;  Qy 426 GGGCCTGCAGGAGTCCTGGGCCTGGCTGCTGCTCATGTACGTCAGGACGGT 485  Db 86 GGTGCTGCAGGAGTCCTGGGCCCAGCTGCTCATGTACGTCAGCACGCGGAACGGT 145	0y         486 ACAAGTGGCTGCGCTTCAGCGAGCTGTTGTACCTGAACGTGTACGCGCGGCGCGGCGGCGCGCGGCGCGCGC
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1930 CCTGGGGACAAGAGTTCTACCA 1952 	BC026374 2448 bp mRNA linear ROD 06-OCT-2003 ON Mus musculus cDNA sequence BC026374, mRNA (cDNA clone MGC:31116 IMAGE:4163362), complete cds. NR BC026374 BC026374.1 GI:20071335 MGC.	Mus musculus (house mouse)  Mus musculus  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  E 1 (bases 1 to 2448)  Strausberg, R.L., Feingold, E.A., Grouse, L.H., Derge, J.G.,  Klauener, R.D., Collins, F.S., Magner, L., Shennen, C.M., Schuler, G.D.,	Albekins, R.P., deebely, D., bucce, T., Max, S.I., Mang, J., Hsieh, F., Hopkins, R.P., Jordan, H., Moore, T., Max, S.I., Wang, J., Hsieh, F., Diatchenko, L., Marusina, K., Farmer, A.A., Rubin, G.M., Hong, L., Stapleton, M., Soares, M.B., Bonaldo, M.F., Casavant, T.L., Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S., Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J., Abrameon, R.D., Mullahy, S.J., Bosak, S.A., McEwan, P.J., McKernan, K.J., Malek, J.A., Gunaratne, P.H., Richards, S.,	<pre>Worley,K.C., Hale,S., Garcia,A.M., Gay,L.G., Hulyk,S.W., Villalon,D.K., Muzny,D.M., Sodergran,E.J., Lu,X., Gibbs,R.A., Fahey,J., Helton,E., Ketteman,M., Madan,A., Rodrigues,S., Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y., Bouffaard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D., Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M., Butterfield,Y.S., Krzywinski,M.T., Skalska,U., Smailus,D.E., Schharch,A., Schein,J.R., Jones,S.J., and Marra, M.</pre>	Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences L. Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002) 12 22389257			cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing Group at the Stanford Human Genome Center, Stanford University School of Medicine, Stanford, CA 94305 Web site: (Dickson, Mark) mcd@paxil.stanford.edu Contact: (Dickson, Mark) mcd@paxil.stanford.edu Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers, R. M.	rce	/organism="Mus musculus" /mol_type="mRNA" /strain="FVB/N" /db_xref="taxon:10090"
Oy Dp	RESULT 6 BC026374 LOCUS DEFINITION ACCESSION VERSION KEYWORDS	SOURCE ORGANISM REFERENCE AUTHORS			TITLE JOURNAL MEDLINE PITAMED	REFERENCE AUTHORS TITLE JOURNAL	REMARK COMMENT		FEATURES	
506 CGGGGGAGACCCAGGAAATGTGACCCTGTTCGGCCAGTCGGGGGGCCATGAGCATCTC 565 850 AGGACTGATGATGACCCCTAGCCTCGGGTCTCTTCCATCGGGCCATTTCCCAGAGTGG 909	910 CACCGCGTTATTCAGACTTTCATCACTAGTAACCCACTGAAAGTGGCCAAGAAGGTTGC 969  [	1030 ATCAGGACCAAGGTGATGCCGTGTCCCAACAAGATGAGATTCCTCCAACTGCAACTTCCA 1089	1150 AGATGACCCTTTGGTGCTCCTGACCCAGGGGAAGGTTTCATCTGTGCCCTACCTTCTAGG 1209	1270 GCAGGCGATGAGAAAGGAAACCATCACTAAGATGCTCTGGAGTACCCGCACCCTGTTGAA 1329	O TGACTGGAAGATGCTACGAAACCGTATGATGGACATAGTTCAAGATGCCACTTTCGTGTA 		1226 ATTTGAGCACCACGCTCGTGGAATAATCGTCAACCCCGCACTGATGGGGCGAGACCATGG 1285 1570 GGATGAGATGTACTTCCTCTTTGGGGCCCCCTTCGCCACAGGCTTTCCATGGGTAAGGA 1629 1286 GGATGAGATGTACTTCCTCTTTGGGGCCCCTTCGCCACAGGCTTTCCATGGGTAAGGA 1345	1630 GAAGGCACTTAGCCTCCAGAIGATATACTGGGCCAACTTTGCCCGCACAGGAAACC 1689 1346 GAAGGCACTTAGCCTCCAGAIGATAATACTGGCCCACAGGACACC 1405 1360 CAATGATGGGAATCTGCCCTGCTGGCCACACACACACACA	1750 GGATITTACCACAAGAGTGGGCATGAAGAGAAGAAGAAGAAGAGGTGTTTTGGATGAG 1809	1870 GGAGCCAAGAGGGGTTTGCCCCACCATCCAGGCCCTGGGGACACTAGCCATGGACATA 1929 

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Pred. No. 1.8e-223;
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/note="COesterase; Region: Carboxylesterase"
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                                                                                                           /note="synonym: MGC31116"
/db_xref="LocusID:234677"
/db_xref="MGI:2384581"
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gene="BC026374"
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Best Local Similarity 75.9%;
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QY         1791 AGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGGCAATTCT 1850           Db         1801 AGATGGCTTTCTGGAGTCAGCTTCGCCAATCTCAGAAACCTTAGAAGCACCAGCTGTACT 1860           QY         1851 AAGGGTGGCTATGCAGGAAGGAGCCA 1876           Db         1861 GAGATGACCAAGGAGGGGTA 1886	RESULT 7 AX37590 AX37590 DEFINITION Sequence 57 from Patent W00168848. ACCESSION AX375990 VERSION AX375990 AX375990 VERSION AX375990 AX37590	Change, TITLE Secreted and transmembrane polypeptides and nucleic acids encoding the same JOURNAL Patent: WO 0168848-A 57 20-SEP-2001;  FEATURES Location/Qualifiers Location/Qualifiers   1. 2456   /organism="Homo sapiens"   //mol type="unassigned DNA"   //db_xref="taxon:9606"   //db_xref="taxon:	Query Match Best Local Similarity 78.2%; Pred. No. 2.56-210; Matches 1446; Conservative 0; Mismatches 0; Indels 403; Gaps 3;  Qy 224 GGTGCCTTGCACCAAGAGGCTCAAGTGGTCACCAAATATGGAACCTGCAAGGAAA 283  Db 388 GGTGCCTTGCACCAAGAGGCCTCAAGTGGTCACCAAATATGGAACCTTGCAAGGAAAA 447	284 CAGATGCATGTGGGGAAGACACCCATCCAAGTCTTTTTAGGAGTCCCCCTTCTCCGGACCT	Db         628         GCACGATCTCGGCTCACTGCAGCTGCAGCTGCGCAGCTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGTGCAGGTGCTCGGGGCCAGCTGGCCTCAGGGGCCAGCTGGCCTCAGTGCAGTGCTGCAGTGCTGAGTGTCTGAGTGTCTGAGTGTCTGGGGCCAGCTGGAGTCTTGAGTGTCTGAGGGCCTGCATGGCTGCCTGAGTGCTGAGTGTCTTGAGTGTCTTGAGGTGCTTGAGTGCTTGAGGGCCTACAGTGCTGCAGCTGCCTCGATG         77	QY         464 TACGTCAGCACGGGAAACGGTACAAGTGGCTGCGCTTCAGCGAGGACTGTCTGT

224 ACCTOTATICGGGCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
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1604 GCCACAGGCCTTTCCATGGGTAAGGCAGGAGGCACTTAGCCTCCAGATGATGAATA 1684	CTGG	KYGTLQG LALSPGW KWLRFSE VFLQHRL AMSISGL
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	Db 628 GCACGATCTCGGCTCACTGCAACCTCCGGCTTCAAGCGAGTCTCCTGCCTCAG	425 .AG 687
ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. FRERICE 1 (Pases 1 to 2446)	oy 426	TG 463
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Lee J., Lewis, L., Liao, D., Mark, M., Robbie, E., Sanchez, C Schoenfeld, J., Seshagiri, S., Simmons, L., Singh, J., Smith, Stinson, J., Vadts, A., Vandlen, R., Watanabe, C., Wieand Xie, M.H., Yansura, D., Yi, S., Yu, G., Yuan, J., Zhang, M., Zl	C.,	TC 583     TC 867
Goddard, A., Wood, W.I. and Godowski, P.  TITLE The Secreted Protein Discovery Initiative (SPDI), a Large Effort to Identify Novel Human Secreted and Transmembrane A Bioinformatics Assessment	-Scale -S	CC 643 
JOURNAL Genome Res. 13 (10), 2265-2270 (2003) PUBMED 12975309 REFERENCE 2 (bases 1 to 2456) AUTHORS Clark.H.F.	Qy         644         CGCGAGAAAGTGGTGCTGTTTTCTGCAGCACAGGCTCGGCATCTTCGGCTTCCTGAGC           Db         928         CGCGAGAAAGTGGTGTTGTTTCTGCAGCAACAGGCTTCGGCATCTTCGGCTTCTGAGC	GC 703
Direct Submi Submitted (0 Inc., 1 DNA	Oy 704 ACGGACGACGACGCGCGCGCGCGGAACTGGGGGGTGCTGGACCAGATGGCGGCTCTG	
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gene 1. 2456 1. 2456 /locus tag="UNQ440" CDS /locus tag="UNQ440"	Qy         824 CAGTCGGGGGGCCATGAGCATCTCAGGACTGATGATGATCACCCCTAGCCTCGGGTCT           Db         1108 CAGTCGGGGGGCCATGAGCATCTCAGGACTGATGATGACCCCTAGCCTCGGGTCT	CTC 883     CTC 1167
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/procent 1g="AAQ8855".1" /db_xref="G1:37182131" /translation="MSTGFSFGSGTLGSTTVAAGGTSTGGVFSFGTGTS	SSNPSVGLNF OY 944 CCACTGAAAGTGGCCAAGAAGGTTGCCCACCTGGCTGGATGCAACCACAACAGCACACACA	AG 1003

KEYWORDS SOURCE ORGANISM Homo sapiens Ukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota: Metazoa; Chordata; Craniata; Hominidae; Homo. Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  REFERENCE JAUTHORS Elliot, V.S., Gandhi, A.R., Griffin, J.A., Hafalia, A.J., Khan, F.A., Elliot, V.S., Sanjanwala, M.S., Tang, Y.T., Thornton, M. and Tribouley, C.M. TITLE Drug metabolizing enzymes JOURNAL Patent: WO 0212467-A 28 14-FEB-2002; FEATURES Incyte Genomics, Inc. (US) FEATURES JOURNAL Mol Lype="Homo sapiens" //mol Lype="Homo sapiens" //mol Lype="Homo sapiens" //mol Exef="taxon:9606" //note="Incyte ID No: 7473869CB1"	Query Match Best Local Similarity 100.0%; Pred. No. 4.1e-186; Matches 902; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	Oy 426 GGTGCCTGCAGGAGTCCTGGGGCCAGCTGGCTCGATGTACGTCAGGACGCGGGAACGGT 485	Oy 486 ACAAGTGCCTTCAGCGAGGACTGTCTGTACCTGAACGTGTACGCGCGGCGCG 545	Qy         546         CGCCCGGGGATCCCCAGTGATGGTCTGGTTCCCGGAGGCCCTTCATCGTGG         605           Db         848         CGCCCGGGGATCCCCAGTGATGATGATGGTCTGGTTCCCGGAAGGCCCTTCATCATCGTGG         907	Oy 606 GGCTGCTTCTTCGTACGAGGGCTCTGACCTGGCCGCCGCGGAAAAGTGGTGCTGGTGT 665 Db 908 GCGCTGCTTCTTCGTACGAGGCTCTGACTTGCCGCCGCGAGAAAGTGGTGCTGTGT 967	Oy 666 THOTGCAGCACAGGCATCTTCGGCTTCCTGAGCACGACACACAC	Oy 726 GGAACTGGGGGCTGCTGGACCAGATGGGGGGCTCTGGGGTGCAGGAGAACATGGCAG 785	QY         786         CCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGCCAGTCGGGGGGGCCATGAGCA         845           Db         1088         CCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGCCAGTCGGGGGGCCATGAGCA         1147	Oy 846 TCTCAGAACTGATGATGTCACCCCTAGCCTCGCGTCTCTTCCATCGGGCCATTTCCCAGA 905	Oy 906 GTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAACCCACTGAAAGTGGCCAAGAAGG 965	Oy 966 THGCCCACCTGGATGCAACCACAACAGCACACACACACACAC	Oy 1026 CACTATCAGGACCAAGGTGATGCGTGTGCCAACAAGATGAGATTCCTCCAACTGAACT 1085  1328 CACTATCAGGGACCAAGGTGATGCGTGTGTCCAACAAGATGAGATTCCTCCAACTGAACT 1387  Oy 1086 TCCAGAGAGACAAGAGATTATCTGGTCCATGAGCCCTGTGGTGGTTGGT
Db 1228 CCACTGAAAGTGGCCAAGAAGCTTGCCCACTGGCTGGATGCCACACACA	Qy 1304 CTCTGGAGTACCCGCACCCTGTTGAATATCACCAAGGAGCAGGTACCACTTGTGGTGGAG 1363	Qy 1364 GAGTACCTGGACAAIGTCAATGAGCATGACTGGAAGATGCTACGAAACCGTATGATGGAC 1423	Qy 1424 AIAGITCAAGAIGCCACITICGIGIAIGCCACACIGCAGACIGCICACCIACCACCGAGAI 1483	QY 1484 GCCGGCCTCCCTGTCTACCTGTATGAATTTGAGCACCACGCTCGTGGAATAATCGTCAAA 1543 Db 1684	OY 1544 CCCCGCACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGCCCCTTC 1603  Db 1684	Db 1684	QY 1664 GCCAACTITGCCGCACAACCCCAATGATGGGAATCTGCCCTGCTGGCGACACC 1723	OY 1724 AACAAGGAIGAAAAGTACCIGCAGCIGGAITTTACCACAAGAGIGGCCATGAAGGICAAG 1783	Qy 1784 GAGAAGAAGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGG 1843 Db 1785 GAGAAGAAGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAG	Qy 1844 CAATTCTAAGGGTGGCTATGCAGGAAGGAGCCAAAGAGGGGTTTGCCCCCACCATCCAGG 1903  Db 1845 CAATTCTAAGGGTGGCTATGCAGGAAGGAGCCAAAGAGGGGTTTGCCCCCACCATCCAGG 1904	Qy 1904 CCCTGGGGAGACTAGCCATGGACATACCTGGGGACAAGAGTTCTACCCA 1952	RESULT 10 AX377795 LOCUS DEFINITION Sequence 28 from Patent W00212467. ACCESSION AX377795 GI:19573886

	1109 AICHGE CONTROLL OF THE STATE CONTROLL O	Db 979 CTCATGGGTGTCAACCATGAGTTCAGCTGGCTCATCCCGGGGACCAAGGTGATG 1035 Qy 1229 AATTGGCTCTTGCCTTATATCATGAAGTTCCGGCTAAACCGGCAGGGGAGGAAAGGAA 1288 Db 1036 CGTGTGTCCAACAAGATGATCATGAAGTTCCCGCTAAACCGGCAGGCGATGAGAAAGGAA 1095	Oy 1289 ACCATCACTAAGATGCTCTGGAGTACCCGCACCTGTTGAATATCACCAAGGAGCAGGTA 1348	QY         1409 AACCGTATGATGACATAGTTCAAGATGCCACTTTCGTGTATGCCACACTGCAGACTGCT 1468           Db         1159 AACCGTATGATGACATAGTTCAAGATGCCACTTTCGTGTATGCCACACTGCAGACTGCT 1218           QY         1469 CACTACCACGAGATGCCGGCCTGTTTCGTGTATGAATTTGAGCACCACGTGT 1528	Db 1219 ¢A¢TA¢cA¢cóaAaTaccóa¢cT¢c¢T¢T¢AccT6TATGAATTTGA¢cA¢CT¢GT 1278 Qy 1529 GGAATATCGTCAACCCCGCACTGATGGGCAACCATGGGGATGAGATGTACTTCCTC 1588	OY 1589 ITTGGGGGCCCTTCGCCAGGCTTTCCATGGGTAAGGAGAAGCCACTTAGCCTCCAG 1648		Db 1459 IGCTGGCCACGCTACAACATGAAAAGTACCTGCAGCTTGTTTTTACCACAAGAGTG 1518  Qy 1769 GGCATGAAGCTCAAGGAGAAGAAGATGGCTTTTTGGATGACTGTACCAGTCTCAAAGA 1828  Db 1519 GGCATGAAGCTCAAGAAGAAGAAGATGGCTTTTTGGATGACTGTACCAGTCTCAAAGA 1578	Oy 1829 CCTGAGAGGGGATTCTAA 1852 	47 catus 47.1	SOURCE Felis catus (cat) ORGANISM Felis catus ORGANISM Felis catus Dakaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis. REFERENCE 1 AUTHORS Miyazaki,M., Sai,H., Taira,H. and Yamashita,T.
QY         1146 TCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGGAAGGTTTCATCTGTGCCCTACCTTC         1205           Db         1448 TCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGGAAGGTTTCATCTGTGCCCTACCTTC         1507           QY         1206 TAGGTGTCAACAACCTGGAATTCAATTGGCTCTTGCCTTATATCATGAAGTTCCCGCTAA         1265	1908 IAGGIGAACAGCAGAAATICAATIGGCICITGCCITATATCATGAAGTICCGCGTAA 1 1266 ACCGGCAGGCGATGAGAAAGGAAACCTCACTAAGATGCTCTGGAGTACCCGCACCTGT 1 1568 ACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATGCTCTGGAGTACCCGCACCCTGT 1	Oy 1326 TG 1327 	RESULT 11 AX921060 AX921060 LOCUS DEFINITION Sequence 53 from Patent W002068652. ACCESSION AX921060. VERSION AX921060.1 GI:40214762 SCURCE Homo sapiens (human)	ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; REFERENCE 1 AUTHORS TITLE Nov-x proteins and nucleic acids encoding same JOHNAL, Patent: WO 02068652-8 53 06-58P-2002;	ource	IGIN Query Match Best Local Similarity 69.6%; Pred. No. 3.1e-121; Matches 894; Conservative 0; Mismatches 321; Indels 69; Gaps	569 GIGAIGGICIGGIICCCGGGAGGCGCCTICAICGIGGGCGCTGCTIGCTIACGAGGGCGC 18	Qy         629 TCTGACTTGGCCGCGGGAAAGTGGTGCTGGTTTTCTGCAGCACAGGCTCGGCATC         688           bb         448 TCAGCTTGGCTGCTATGGGGATGTGGTCGTGGTTACAGTCCAGTACGGCTTGGGGTC         507           cy         689 TTCGCTTCCTGAGCACGACGACGCGCGCGCGCGAAACTGGAGCTGCTGGACCAG         748           cy         689 TTCGCTTCCTGAGCACGACGACGACGACAGGGTTCTAGAACTG         567           cb         508 CTTGCTTCTCACGACTGGAATGAACAAGAGATCTGGAACTGGAACTG         567			QY 929 TTCATCACTAGTAACCCACTGAAAGTGGCCAAGAAGGTTGCCCACCTGGCTGG

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                                                             Miyazaki,M., Sai,H., Taira,H. and Yamashita,T.
Direct Submission
Submitted (19-OCT-2002) Masao Miyazaki, Iwate University,
Department of Agro-bioscience, Faculty of Agriculture; 3-18-8 Ueda,
Morioka, Iwate 020-8550, Japan (E-mail:cdg83700@par.odn.ne.jp,
Tel:81-19-621-6157, Fax:81-19-621-6177)
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/db_xref="G1:30038513"
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/db_xref="taxon:9685"
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/product="carboxylesterase D1"
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LAEKKFNSVPYIIGINKQEFGWLLPMMGYPLSEDKLDQKTASSLLWKSYPIANIPEE
LTPLASEKYLGGTDDPVKKKALFLDMLGDVVFGVPSVTVARHHRDAGAPTYMYEFQYH
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Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis
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Submitted (11-FEB-1999) Masakiyo Hosokawa, Chiba University,
Submitted (11-FEB-1999) Masakiyo Hosokawa, Chiba University,
Faculty of Pharmaceutical Sciences; 1-33 Yayoi-cho, Chiba,
263-8522, Japan (E-mail: masakiyo@p.chiba-u.ac.jp,
Tel:81-43-290-2921, Fax:81-43-290-2921)
           complete
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                                                                                                                                                                                                                                                                Chiba, K.

Purification, molecular cloning, and functional expression of liver microsomal acyl-CoA hydrolase: a member of the carboxylesterase multigene family Arch. Biochem. Biophys. 389 (2), 245-253 (2001)
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  familiaris CESdD1 mRNA for carboxylesterase D1,
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                                                    AB023629.1 GI:14331124
carboxylesterase D1; Dog liver carboxylesterase
Canis familiaris (dog)
Canis familiaris
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Pred. No. 1.6e-83;
); Mismatches 657;

    1923
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    /mol_type="mRNA"
    db_xref="taxon:9615"
    1923

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Best Local Similarity 56.5%;
Matches 868; Conservative
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1464 1687

	542 CGGGGGGGGATCCCCAGTGCCAGTGATGGTCTGGGGGGGG	722 CGCGGGAACTGGGGGCTGCTGGACAGATGGCGGCTTGGGCTGGGTGCAGGAGAACATC 781	842 AGCATCTCAGGACTGATGATGATGACCCCTAGCCTCGGGTCTTCCATGGGCCATTTCC 901	v1—v1 v1 ≪ v1—	altetratigacaccelaladaacaccecticetaaccactetatatatagagag 985  Gratecaaaccetitagagaccettceaacaaacatitatatatatatatacceta 120  CIGCIGCCAAAGACCTGCAAGATTCAGCAAGAAAAAAAAAA	1106 CCACTCTCTGAAGGCAAACTGGAACGAGCTACAGAACTCTTGTGGAAGTCCTAC 1165 1319 ACCCTGTTGAATATCACCAAGGAGCAGCTACACTTGTGGAGGAGTACCTGGACAAT 1378 1319 ACCCTGTTGAATATCACCAAGGAGCAGGTACCTTGTGGAGGAGTATTAGGAGG 1225 1379 GTCAATGACAAGAGAGAGAGAGAGAGAGAGAATATAGGAGG 1225 1379 GTCAATGAGAAGAAGAAGATGAAGAAGAGAAGAGAATAGATCAAGAGGG 1225 1226 ACAGATGACCCTGTCAAAAAGAAAGACTTGTTCCTGGACATGCTTGCAGATTTG 1279 1439 ACTTTCGTGTATGCCACACTGCAGACTGCTCACCAGAGGGCCTCCCTGTC 1498
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Qy         1688 CCCAATGATGAGGAATCTGCCTGCTGGCCACGCTACAACAAGATGAAAAGTACCTGCAG 1747           Db         1525 CCCAATGAGGAAAGGCTGCCTCTTGGCCCGCCTACGAGGAAGGA	RESULT 14 AF036930 LOCUS AF036930 LOCUS AF036930 LOCUS DEFINITION O'TYCTOLAGUS cuniculus liver carboxylesterase mRNA, complete cds. ACCESSION AF036930 VERSION KEYWORDS SOURCE O'TYCTOLAGUS cuniculus (rabbit) O'TYCTOLAGUS cuniculus (rabbit) Bukaryota; Metazoa; Chordata; Craniata; Euteleostomi;	Nammalia; Butheria; Lagomorpha; Leporidae; Oryctolagus.  REFERENCE 1 (bases 1 to 1717)  AUTHORS Potter, P.W., Pawlik, C.A., Morton, C.L., Naeve, C.W. and Danks, M.K.  TITLE Isolation and partial characterization of a cDNA encoding a rabbit liver carboxylesterase that activates the prodrug irinotecan (CPT-11)  JOURNAL Cancer Res. 58 (12), 2646-2651 (1998)  MEDLINE 98297515	PUBMED 9635592  REFERENCE 2 (bases 1 to 1717)  AUTHORS POLLEY, P.M.  TITLE Direct Submission JOURNAL Submitted (02-DEC-1997) Molecular Pharmacology, St. Jude Children's FEATURES Location/Qualifiers  FEATURES 1. 1717  Source 1. 1717	/organism="Oryctolagus cuniculus" /wol_type="nRNA" /db_xref="taxon:9986" /tissue_type="liver" /tissue_type="liver" /EC_number="3.1.1.1" /codon_start=1 /codon_start=1 /product="liver_carboxylesterase" //h xref="d:"3216698.1"	MALASLAACTAWGHPSAPPVUDTVHGK RAFAPPQQAESWSHYKYNTSYPRMCSQD TYTDALLTRGREDSWSHYKYNTYSYPRMCSQD STGDEHSRGNWGHLDQVAALRWVQDNIA STGLFRAL SESGVALLESSTFRKNTSSLA SYTLKNKEMALDLVGPRENTAELTTVI SFGWIIPWQMLGYPLSEGKLDQKTATEL SKOLFLDMADLLFQSVNVARTELTWN SKENCLELDALLESSTREDELKLSKVNW SKENCHGAPFELKEGATERE	ORIGIN  Carboxylesterase: SwissProt Accession Number P12337"  Query Match  Best Local Similarity 57.2%; Proce 428.8; DB 4; Length 1717;  Best Local Similarity 57.2%; Proce 632, DB 4; Length 1717;  Matches 863; Conservative 0; Mismatches 632; Indels 15; Gaps 4;  Oy 305 CCATCCAAGTCTTTTAGAGTCCCTTCCCAGACCTCTTAGGTATCTCAGGTTT 364  Db 146 CCCGTGGCCGTCTTCTGGGAGTCCCTTCGCCAAGCCCCTCTTGGATCCTCAAGGTTT 205

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TISANWHCIRQKTEELLETTIKMKFLSLDIQGDPRESQPLLGTVIDGMLLLKTPEE
LQAERNFHTVPYMYGINKQBEGWLIPMLMSYPLSEQLDQKTAMSLLWKSYPLVCIAK
ELIPEATEKYLGTDDTVKKKOLFLDLADVMFQVBSVIVARNHRDAGAPTTWYPERY
RPGFSSDMKRYLGTDDTORFCRYFGAPFLKEGASEERIRJSKAVKWKEWANPARNGNP
NGEGLPHWPEYNQKEGYLQIGANTQAAQKLKDKEVAFWTNLFAKKAVEKPPQTEHIEL
                                                                                                                                                                                                                                                                                                                                                                            Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Series: IRAK Plate: 21 Row: m Column: 7 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 16905523. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          267
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                                                                                                                                                                                                                                                                                                    D.M., Nanavati,
Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: DCTD/DTP/Gazdar
cDNA Library Preparatoby: The Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Baylor College of Medicine Human Genome
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/note="COesterase; Region: Carboxylesterase"
/db_xref="CDD:pfam00135"
                                                                                                                                                                Sequencing Center
Center code: BCM-HGSC
Center code: BCM-HGSC
Contact: amg@bcm.tmc.edu
Contact: amg@bcm.tmc.edu
Contact: P.H., Garcia, A.M., Lu, X., Hulyk, S.W.,
Kowis, C.R., Sneed, A.J., Martin, R.G., Muzny, D.M.,
A.N., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue type="Lung, large cell carcinoma"
/clone lib="NIH MGC_68"
/lab host="DH10B"
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Homo sapiens (Iuumai),
Bukaryota, Metazoa, Chordata; Craniata; Vertebrata; Euteleostomi;
Mammaliai, Eutheria, Primates; Catarrhini; Hominidae; Homo.
I Dases 1 to 1975)
Strausberg, R.L., Feingold, E.A., Grouse, L.H., Derge, J.G.,
Klausner, R.D., Collins, F.S., Wagner, L., Shemmen, C.M., Schuler, G.D.,
Altschul, S.F., Jordan, H., Moore, T., Max, S.I., Wang, J., Hsieh, F.,
Diatchenko, L., Marusina, K., Farmer, A.A., Rubin, G.M., Hong, L.,
Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S.,
Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S.,
Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J.,
Abramson, R.D., Mullahy, S.J., Boask, S.A., McEwan, P.J.,
Worley, K.C., Hale, S., Garcia, A.M., Gay, L.J., Hulyk, S.W.,
Villalon, D.K., Muzny, D.M., Soderspen, E.J., Lux, Gibbs, R.A.,
Fahey, J., Helton, E., Ketteman, M., Madan, A., Rodrigues, S.,
Boutfard, G.G., Blakesley, R.W., Touchman, J.W., Green, E.D.,
Dickson, M.C., Rodriguez, A.C., Grimwood, J., Schmutz, J., Myers, R.M.,
Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E.,
Generation and initial analysis of more than 15,000 full-length
human and mouse cDNA sequence
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  1280 TTATTTGGTGCCCATCTGTGAATGTGGCTCGTCACCACACAGAGATGCTGGAGCCCCCACC 1339
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Submitted (15-AUG-2001) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
USA
NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BC012418 1975 bp mRNA linear PRI 03-OCT-2
Homo sapiens carboxylesterase 1 (monocyte/macrophage serine
esterase 1), mRNA (cDNA clone MGC:9220 IMAGE:3879691), complete
                                                                                      TACCTGTATGAATTTGAGCACCACGCTCG----TGGAATAATCGTCAAACCCCGCACTGAT
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BC012418.1
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BC012418
LOCUS
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VERSION
KEYWORDS
SOURCE
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AUTHORS
TITLE
JOURNAL
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AUTHORS
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August 11, 2004, 09:13:52 ; Search time 780.458 Seconds (without alignments) 10793.891 Million cell updates/sec
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1983
1 cctttagccaattcggccga.....gtttaaacctgcaggactag 1983
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
                                                                                     - nucleic search, using sw model
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Gapop 10.0 , Gapext 1.0
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Perfect score:
Sequence:
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Pred. Mo. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

genesedn1980s:\*
genesedn1990s:\*
genesedn2000s:\*
genesedn2001as:\*

N Geneseq 29Jan04:\* 1: geneseqn1980s:\*

Database

geneseqn2003as:\* geneseqn2003bs:\* geneseqn2003cs:\*

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geneseqn2001bs:\* geneseqn2002s:\*

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	antisense nucleic cells, transgenic antigenic peptide used in claimed m				discret, periconitis, caronic obstructive pulmonary disease, lund inflammation, asthma appendictis, septic shock, nephritis, amyloidosis, chronic bronchitis, sarcoidosis, scleroderma, lupus, polymyositis, Reiter's syndrome, psoriasis, pelvic inflammatory disease, inflammatory chronic disease, inflammatory		detection assays biology) and pre assays, monitori	Sequence 1983 BP; 460 A	Query March Best Local Similarity 100.0%; Pred. No. 0; Matches 1983; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	1 CCTTTAGCCAATTCGGCGAGGCCTCCGGCCCCAGTACTTGCTGGCAGGGATTAAGAGCA 60	61 GATAAAAGTGTGCTCACACTGTAGACACGGCTACCATGCCACTGCAGTGTTGCCATC 120 	121 CACAGIGITGCCATCACTCCTGCCCACAGCAGCTGGCTGGAGCAIGAGGTGGAITCT 180	181 GIGCIGGAGCCICACCCTCTGCCTGATGGCGCAGACGCCTTGGGTGCCTTGCACACA 240 181 GIGCIGGAGCCTCACCTCTGCCTGATGGCGCAGACGGCTTGGGTGCCTTGCACACCA 240	GAGGCCTCAAGTGGTCACCAAATATGGAACCCTGCAAGGAAAACAGATGCATGTGGGGAA	GAGGCCTCAAGTGGTCACCAATATGGAACCCTGCAAGGAAAAAAAGAGTGCATGTGGGGAA	301 GACACCCATCCAAGTCTTTTAGGAGTCCCCTTCTCCAGACCTCCTCTAGGTATCTCAG 380	361 GTTTGCACCTCCAGAACCCCCGGAGCCCTGGAAAGGAATGCAGAGATGCTACCACCTACCC 420	GCCTGGGTGCCTGCAGGAGCTCCTGGGGCCAGCTGGGTGCTACGTGCGCGGGGAACTGTACGTGCGCGGGGAACTGTACGTGCGCGGGGAACTGTACGTAC	421 GCCTGGGTGCCTGCAGGGTCCTGGGGCCAGCTGGCCTCGATGTACGTCAGCGGGGGGGG	
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11-AUG-2000; 2000US-0224728P.
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The invention relates to an isolated human drug metabolising enzyme (DME) pollypeptide or a biologically active or immunogenic fragment of DME. DME is useful for diagnosis, treatment and prevention of cell proliferative, autoimmune/inflammatory developmental, endocrine, eye, metabolic and distribute active dimmunodeficiency syndrome (AIDS), inflammatory distress syndrome, Addison's disease, atherosclerosis, allergies, anaemia, asthma, autoimmune haemolytic anaemia, autoimmune thyoidtis, crohn's disease, atopic dermatifis, diabetes mellitus, glomerulonephritis, rheumatorid arthritis, systemic lupus erythematosus, ulcerative colitis, rheumatoid arthritis, systemic lupus erythematosus, ulcerative colitis, uveitis, viral, bacterial, protozoal, parasitic. fungal, helmithic infections and trauma. Cell proliferative disorders include epilepsy and cataract; and endocrine disorders include disorders associated with hypothyroidism including goitre, Grave's disease, disorders such as diabetes mellitus, disorders associated with hypothyroidism including goitre, Grave's disease, and present associated with gonedal steroid hormones such as anoremate, disorders associated with gonadal steroid hormones such as condenses of the eye include conjunctivitis and macular degeneration and metabolic disorders include diabetes, cystic fibrosis, obesity and metabolic disorders include diabetes, cystic fibrosis, obesity and metabolic disorders include diabetes, cystic fibrosis, obesity and metabolic disorders include diabetes, cystic fibrosis, disease, ulcer, hepatic tumours. DME gene is useful in gene therapy. The present sequence is human DME-10 cDNA
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AR, Griffin JA, Hafalia AA, Khan FA, Lal P, Lee S, Lu DAM,
Patterson C, Ramkumar J, Ring H, Sanjanwala MS, Tang YI,
velu K, Thornton M, Tribouley CM, Walia NK, Warren BA, Yang J;
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                                                                                                                                                                                                                                                                                                                                         New human drug metabolizing enzyme polypeptide and polynucleotide useful for diagnosing, treating and preventing cell proliferative, autoimmune/inflammatory, endocrine, eye, metabolic and gastrointestinal
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18-AUG-2000; 2000US-0226440P.
24-AUG-2000; 2000US-0228067P.
31-AUG-2000; 2000US-023063P.
13-SEP-2000; 2000US-023244P.
20-SEP-2000; 2000US-0234269P.
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                                                                                                                                                                                                                                                                  The invention relates to isolated polynuclectide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, ollgomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynuclectides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II). (II) is useful in some therapy rechniques to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of stres expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynuclectide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations are seponsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this principal part in the printed specification, but was obtained in the printed specification, but was obtained in the printed specification.
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                              nucleotide sequence
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Chen J;

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Baker

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The present invention describes secreted and transmembrane polypeptides and their polynucleotides. The nucleotide sequences are useful as sources of probes, primers, for chromosome mapping, and for generation of antisense sequences. They can also be used to create transgenic animals. The proteins can be used to treat a variety of diseases and disorders, depending on their function. Diseases that may be treated include blood cogquiation disorders, cancers and cellular adhession disorders. They may also be used to raise antibodies. AAZ33891 to AAZ34338, and AAY41685 to AAY41774 represent polynucleotide and polypeptide sequence given in the exemplification of the present invention
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New secreted and transmembrane polypeptides and their polynucleotides, useful for treating blood coagulation disorders, cancers and cellular
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78.2%; Pred. No. 6.6e-254;
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                                                                                                                                                                                                                                                                                                                                                                                                       Novel PRO polypeptides and polynucleotides used in detection methods, target bloactive molecules to specific cells, and to modulate cellular
                                                                                                                                                                                                                                KP, Botstein D, Desnoyers L, Eaton DL, f E, Fong S, Gao W, Gerber H, Gerritsen ME; PJ, Grimaldi CJ, Gurney AL, Hillan KJ; Napier MA, Pan J, Paoni NF, Roy MA, Shelton Williams PM, Wood WI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGCCTTGCACACCAAGAGGCCTCAAGTGGTCACCAAATATGGAACCCTGCAAGGAAAA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51.1%; Score 1013; DB 3; Length 2456;
larity 79.2%; Pred. No. 6.6e-254;
Conservative 0; Mismatches 0; Indels 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2456 BP; 528 A; 719 C; 666 G; 543 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGCTACCACCTACCCGCCTG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2; Fig 90; 636pp; English.
30-NOV-1999; 99WO-US028313.
02-DEC-1999; 99WO-US028551.
02-DEC-1999; 99WO-US030095.
30-DEC-1999; 99WO-US031243.
30-DEC-1999; 99WO-US031243.
30-DEC-1999; 99WO-US031274.
05-JAN-2000; 2000WO-US000277.
06-JAN-2000; 2000WO-US000277.
                                                                                                                                                                                                                                AJ, Baker KP, Filvaroff E, B
Godowski PJ, C
Kuo SS, Napie, Tumas D, Will
                                                                                                                                                                                             (GETH ) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-611443/58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 1446; Conserv
                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAB44279
                                                                                                                                                                                                                                                    Ferrara N, F. Goddard A, Go
Kljavin IJ, 1
Stewart TA,
                                                                                                                                                                                                                                    Ashkenazi AJ,
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primers for PRO polypeptides of the invention. The sequences AAS45925-AAS46231 represent DNA molecules encoding and PCR primers for PRO polypeptides of the invention. The sequences of the invention can be used to detect the presence of a tumour in a mammal by of cells from the animal and a control sample of normal cells, whereby a higher level of expression in the test sample indicates the presence of a tumour in the mammal: include dogs, catts, cattle, horses, sheep, pigs, goats and rabbits but are preferably human. The polypeptides can be used to stimulate tumour necrosis factor (TNY) alpha release from human to blood, when contexted with it. A specific polypeptide can be used to stimulate the proliferation or differentiation of chondrocyte cells. The PRO proteins can be used to determine the presence of tumours and also susceptibility to tumour development, particularly adversal, lung, colon, breast, prostate, rectal cervical, or liver tumours, in mammalian subjects. The oligonucleotide probes specific for the PRO nucleic acids can be used for genetic analysis of individuals with genetic disorders
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                                                                                                                                                                                                                                                                                                                      Gurney AL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel nucleic acids encoding PRO polypeptides, used to diagnose the presence of tumors, such as prostate and breast tumors, in mammals screen for modulators of the compounds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels 403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2456;
                                                                                                                                                                                                                                                                                                                    ), Chen J, Desnoyers L, Goddard A, Godowski PJ, Smith V, Watanabe CK, Wood WI, Zhang Z;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2456 BP; 528 A; 719 C; 666 G; 543 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1013; DB 4;
Pred. No. 6.6e-254;
0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2; Fig 57; 774pp; English.
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                                200005-0201516P.
200000-US013705.
200000-US014042.
200000-US015264.
2000015-0209832P.
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78.2%;
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08-NOV-2000; 2000WO-US0305952.
01-DEC-2000; 2000WO-US032578.
20-DEC-2000; 2000WO-US034956.
                                                                                                                                                                 2000US-00644848.
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P-PSDB; AAU29052.
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                                                                    22-MAY-2000; 2
30-MAY-2000; 2
02-JUN-2000; 2
05-JUN-2000; 2
28-JUL-2000; 2
                25-APR-2000; 203-MAY-2000; 217-MAY-2000; 2
                                                                                                                                                                 22-AUG-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRO polypeptide; mammal; tumour; cancer; human; cattle; horse; sheep; ss; deg; cat, pig; goat; rabbit; tumour necrosis factor alpha; TNF-alpha; blood; chondrocyte cell; cell proliferation; cell differentiation; colon; adrenal; lung; breast; prostate; rectum; cervix; liver; genetic disorder;
                                                                                                                                                                                                                                              GAGAAGAAGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGG
                                                                                                                               AACAAGGATGAAAAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGGCATGAAGCTCAAG
                                                                                                                                                             AACAAGGATGAAAAGTACCTGCAGCTGGATTTTTACCACAAGAGTGGGCATGAAGCTCAAG
                                                                                                                                                                                                                                                                                CAATTCTAAGGGTGGCTATGCAGGAAGGAGCCAAAGAGGGGTTTTGCCCCCACCATCCAGG
                                                                                          --- GAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC
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                                                      GCCAACTTTGCCCGCACAGGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC
                                                                                                                                                                                                                                                                                                                                                         CCCTGGGGAGACTAGCCATGGACATACCTGGGGACAAGAGTTCTACCCA 1952
                                                                                                                                                                                                                                                                                                                                                                                   CCCTGGGGAGACTAGCCATGGACATACCTGGGGACAAGAGTTCTACCCA 1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human DNA encoding PRO polypeptide sequence #29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000WO-US006884.
2000US-0190B2B.
2000US-01910AP.
2000US-0191314P.
2000US-0192655P.
2000US-0192655P.
2000US-01930S2P.
2000US-01930S2P.
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2000US-0194647P.
2000US-0195975P.
2000US-0196000P.
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2000US-0189320P.
2000US-0189328P.
                                                                                                                                                                                                       GAGAAGAAGATGGCTTTT
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21-MAR-2000; 2
29-MAR-2000; 2
29-MAR-2000; 2
30-MAR-2000; 2
64-APR-2000; 2
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21-MAR-2000; 2
21-MAR-2000; 2
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98US-0100149P.
98US-010147P.
98US-0101473P.
98US-0101738P.

22-JUN-1998, 24-JUN-1998, 24-JUN-1998, 24-JUN-1998, 24-JUN-1998, 24-JUN-1998, 24-JUN-1998, 24-JUN-1998, 25-JUN-1998, 25-JUN-2998, 25-JU

Db	1124 CCTGTGGTGGATGGTGATCCCAGATGACCCTTTGGTGCTCCTGACCCGGGGAAG	1184 GTTTCATCTGTGCCCTACCTTCTAGGTGTCAACAACTGGAATTCAATTGGCTCTTGCCT 	1244 TATATCATGAAGTTCCCGCTAAACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATG 	04 CTCTGGAGTACCCGCACCTGTTGAATATCACCAAGGAGCAGTACCACTTGTGGTGGAG 	1364 GAGTACCTGGACAATGTCAATGACATGACTGGAAGATGCTACGAAACCGTATGATGGAC 	Qy 1424 AIAGTTCAAGATGCCACTTTGGTGTATGCCACACTGCAGACTGCTCACCACCACGAGAT 1483	QY 1484 GCCGGCCTCCCTGTCTACCTGTATGAATTTGAGCACGCTCGTGGAATAATCGTCAAA 1543  Db 1684		Qy 1604 GCCACAGGCCTTTCCATGGGTAAGGAGAAGGCACTTAGCCTCCAGATGATGAATACTGG 1663  Db 1684	GCCAACTTTGCCCGCACAGGAAACCCCAATGATGGAATCTGCCCTGCTGGCCAGGCTAC	QY 1724 AACAAGGATGAAAAGTACCTGCAGCTTGATTTTACCACAAGAGTGGGCATGAAGCTCAAG 1783  Db 1725 AACAAGGATGAAAAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGCATGAAGCTCAAG 1784	GAGAAGAAGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGG 18 	Qy 1844 CAATTCTAAGGGTGGCTATGCAGGAGGGGCTTTGCCCCCACCATCAGG 1903	Oy 1904 CCCTGGGGAGACTAGCCATGGACATACCTGGGGACAAGAGTTCTACCCA 1952	RESULT 8 ACA75528
PR 25-SEP-1998; 98US-0101786P. PR 29-SEP-1998; 98US-0102207P. PR 29-SEP-1998; 98US-010230P. PR 29-SEP-1998; 98US-0102330P. PR 29-SEP-1998; 98US-0102330P. PR 30-SEP-1998; 98US-0102370P. PR 30-SEP-1998; 98US-0102570P. PR 01-OCT-1998; 98US-0102570P. PR 01-OCT-1998; 98US-0102584P. PR 01-OCT-1998; 98US-0102568P. PR 02-OCT-1998; 98US-0102368P. PR 06-OCT-1998; 98US-0103349P. PR 06-OCT-1998; 98US-0103349P. PR 06-OCT-1998; 98US-01033449P. PR 07-OCT-1998; 98US-01033449P.	Query Match Best Local Similarity Aatches 1446; Conserv	QY 224 GGTGCCTTGCACAAGAGGCCTCAAGTGGTCACCAAATATGGAACCCTGCAAGGAAAA 283	OY 284 CAGATGCATGTGGGGAAGACCCATCCAAGTCTTTTAGGAGTCCCCTTCTCCAGACCT 343	QY 344 CCTCTAGGTATCCTCAGGTTTGCACCTCCAGAACCCCCGGAGCCCTGGAAAGGAATCAGA 403	Qy         404 GATGCTACCACCTACCGGCTG	Qy 426	426	464 TACGTCAGCAGCGGGGACACACACACACACACACACACAC	Qy         524 AACGTGTACGGGCGGCGGCGCGCCGGGATCCCCAGTGATGGTCTGGTTC         583           IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	CCGGGAGCGCCTTCATCGTGGCGCTCTTCGTACGAGGGCTCTGACTTGGCCGCC	TCCTGAGC	ACGGACGACAGCCGCGCGCGGGAACTGGGGCTGCTGGACCAGATGGCGGCTCTGCGC	Qy         764 TGGGTGCAGGAGACATCGCAGCTTCGGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 823           Db         1048 TGGGTGCAGGAAAATCGAAGCTTCGGGGGGAGACCCAGGAAATGTGACCCTGTTCGC 1107	824 CAGTCGGCGGGGCCATGAGCATCTCAGGACTGATGATGTCACCCCTAGCCTCGGGTCTC	Qy 884 TICCAICGGGCCAITICCCAGAGTGGCACCGCGTATTCAGACTTTTCATCACTAGTAAC 943

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98015 - 0085582P

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98015 - 00874209P

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15-MAY-1998;
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22-MAY-1998;
23-MAY-1998;
23-MAY-1998;
24-MN-1998;
   Human; secreted and transmembrane protein: PRO; gene therapy; tumour necrosis factor-alpha release; TNR-alpha release; chondrocyte proliferation; chondrocyte differentiation; tumour; adrenal tumour; lung tumour; colon tumour; breast tumour; prostate tumour; rectal tumour; cervical tumour; liver tumour; gene; ss.
                                                                                                 Novel human secreted and transmembrane protein PRO873 cDNA.
   ACA75528 standard; cDNA; 2456 BP
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97105-00631486P.
97105-006314120P.
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97105-0063734P.
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97105-006377P.
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                                                                   (first entry)
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                                  ACA75528;
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GATGCTACCACCTACCCGCCTGGATGGAGTCTCGCTGTCGCCAGGCTGGAGTGCAGTG  GCACGATCTCGGCTCACTCCAGCTCCCGGGGTTCAAGCGAGTCTCGTCAG		See   Arcardicated Control	644 CGCGACAAAAGTGGTGTTTTTGCAGCACAGGTCGGCATCTTCGGCTTCCTGAGC 703	764 TGGGTGCAGGAGAACATCGCAGCCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 823 1048 TGGGTGCAGGAGACATCGCAGCCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 1107 824 CAGTCGGCGGGGGCCATGAGCATCTCAGGACTGATGATGTCACCCTGATCGGC 1107 1108 CAGTCGGCGGGGGCCATGAGCATCTCAGGACTGATGATGTCACCCCTAGCCTCGGGTCTC 883 1108 CAGTCGGCGGGGGCCATGAGCATCTCAGGACTGATGATGTCACCCCTAGCCTCGGGTCTC 1167	884 TTCCATCGGCCATTTCCCAGAGTGCACCGCGTTATTCAGACTTTTCATCATGGTAAC 943 1168 TTCCATCGGGCCATTTCCCAGAGTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAAC 1227 127 CCATCGAGACCATTCCCAGAGTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAAC 1227 128 CCACTGAAAGTGGCCAAGAAGGTTGCCCACCTGGCTGGTTGCAACAACAAC 1287 1204 ATCCTGGTAAACTGCCTGAGGGCACCTGGCTGGTTGTTGGGGAACAACAAG 1063	1288 ATCTOGATANCTGCCTGAGGGCCTATCGGGGACCAAGGTGTGTGTGTGTG	1408	TAT	GAGTACCTGGACATGTCAATGAGCATGACTGGAAGATGCTACGAAACGTATGATGATGACA
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							7; Length 2456; 254; 0; Indels 403; Gaps 3; CADATATGGAACCTGCAAGGAAAA 283 [		425
98US-0096867P. 98US-0096891P. 98US-0096897P. 98US-0096949P. 98US-0096959P.	0097952P. 0097954P. 0097954P. 0097974P. 00980114P. 0098716P.	0098821P. 0098843P. 0099602P. 0099741P. 0099754P.	010039812F. 0100662P. 0100664P. 0101751P. 01010330. 0100683P.	01009309. 01008499. 01010189. 01010689. 01014719.	98US-0101477P. 98US-010173PP. 98US-0101739P. 98US-0101743P. 98US-0101922P. 98US-010220P. 98US-010220P. 98US-0102331P.		51.1%; Score 1013; DB 78.2%; Pred. No. 6 6e- tive 0; Mismatches CACCAAGAGCCTCAAGTGGTCAC	GGGGAAGACCCCATCCAAGTCT 	GATGCTACCACCTACCCGCCTG
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                                                                          1484 GCCGGCCTCCCTGTCTACCTGTATGAATTTTGAGCACCACGCTCGTGGAATAATCGTCAAA
                                                                                                                                    1544 CCCCGCACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGCCCCCTTC
                                                                                                                                                                                              1604 GCCACAGGCCTTTCCATGGGTAAGGAGAAGGCACTTAGCCTCCAGATGATGAATACTGG
                                                                                                                                                                                                                                                                                                                  Human; gene; ss; secreted and transmembrane protein; PRO; TNF-alpha;
tumour necrosis factor alpha; chondrocyte cell; tumour; gene therapy;
tissue typing.
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8US-0089538 8US-0089538 8US-0089553 8US-0089553 8US-0090552 8US-0090254 8US-0090538 8US-0090548 8US-0090548	BUS-00906918 BUS-00906918 BUS-009066218 BUS-009086218 BUS-0091086318 BUS-0091086318 BUS-00916288 BUS-00916288 BUS-00916288 BUS-00916288 BUS-00916288 BUS-00916288 BUS-0091638 BUS-0091638 BUS-0091638 BUS-0091638 BUS-0091638 BUS-0091638 BUS-0091638 BUS-0096918	98US - 0097952P - 98US - 0097952P - 98US - 0097954P - 98US - 0097971P - 98US - 0097971P - 98US - 0099871P - 98US - 0098871P - 98US - 0098871P - 98US - 0098871P - 98US - 0098871P - 98US - 0098741P - 98US - 0099752P - 98US - 0099752P - 98US - 0099753P - 98US - 0099753P - 98US - 01009979P - 98US - 0100999P - 98US - 010099P - 98US - 01009P - 98US - 01009P - 98US - 01009P - 98US - 010099P - 98US - 010099P - 98US - 0100
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1998; 98US-0101472P. 1998; 98US-0101475P. 1998; 98US-0101477P. 1998; 98US-0101739P. 1998; 98US-0101739P. 1998; 98US-0101786P. 1998; 98US-01022P. 1998; 98US-010231P. 1998; 98US-010231P. 1998; 98US-01025P. 1998; 98US-01025P. 1998; 98US-01025P. 1998; 98US-01025P. 1998; 98US-01025P. 1998; 98US-010258P. 1998; 98US-010258P.	h Similarity 78.2%; Pred. No. 6.6e-254; 46; Conservative 0; Mismatches 0; Indels 403; Gaps 3;	GGTGCCTTGCACACCACAAGAGCCTCAACAAATATGGAACCCTGCAAGGAAAA 283 	CAGATGCALGTGGGGAAGACACCCATCCAAGTCTTTTTAGGAGTCCCCTTCTCCAGACT 3	CCTCTAGGTATCCTCAGGTTTGCACCTCCAGAACCCCCGGAGCCCTGGAAAGGAATCAGA 403	GATGCTACCACCTACCGGCTG	5	GCACGATCTCGGCTCACTGCAACCTCCGGCTTCCAAGCGAGTCTCCTGCCTCAG 687	CCTCTGAGTGTCTGGGGGTTACAGGAGTCCTGGGGCCAGCTGGCCTCGATG 463	TACGTCAGCACGCGGGAACGGTACAAGTGGCTGCGCTTCAGCGAGGACTGTCTGT	AACGTGTA.CGCGCCGGCGCGCGCCCGGGGATCCCCA 	ccegaagacgccrrcarcargacgcrgcrrcrrcaragagagcrcrgacrrgccacc 6.	CGCGAGAAAGTGGTGCTGGTGTTTCTGCAGCACAGGCTCGGCATCTTCGGCTTCCTGAGC 703	ACGGACGACAGCCACGCGGGGAACTGGGGGCTGCTGGACCAGATGGCGGCTCTGCGC 763 	TGGGTGCAGGAGAACATCGCAGCCTTCGGGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 823 
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Qy 1904 CCCTGGGGAGACTAGCCATGGACATACCTGGGGACAAGAGTTCTACCCA 1952 	RESULT 10 ACC87536 ID ACC87536 standard; cDNA; 2456 BP.	AC ACC87536; XX DT 05-AUG-2003 (first entry)		KW extracellular domain, tumour necrosis factor alpha; TNF-alpha; KW chondrocyte; proliferation, differentiation, cartilage disorder; KW bone disorder; arthritis; sports injury; cancer; tumour; diagnosis; KW adrend tumour; lung; colon; breast; prostate; kidney; rectum; cervix;		P. US2003027278-A1. XX P. 06-FEB-2003.	21-JUN-2002; 2	18-SEP-1997; 18-SEP-1997; 17-OCT-1997;	21-OCT-1997; 24-OCT-1997; 24-OCT-1997;	28-OCT-1997; 28-OCT-1997; 28-OCT-1997;	29-0C1-1997; 29-0C1-1997; 31-0C1-1997; 31-0C1-1997;	13-NOV-1997; 21-NOV-1997; 24-NOV-1997;	24-NOV-1997; 11-DEC-1997;	12-DEC-1997; 17-DEC-1997; 18-DEC-1997;	10-MAR-1998; 11-MAR-1998;	20-MAR-1998; 20-MAR-1998;	27-MAR-1998; 27-MAR-1998; 31-MAR-1998;	31-MAR-1998; 01-APR-1998; 01-APR-1998; 08-APR-1998;	08-APR-1998; 09-APR-1998; 15-APR-1998; 21-APR-1998;	PR 22-APR-1998; 98US-0082569. PR 22-APR-1998; 98US-0082704P. PR 22-APR-1998; 98US-0082707P. PR 28-APR-1998; 98US-0083322P. PR 29-APR-1998; 98US-0083322P.	23-AFR-1330;
824	y 884 TICCALGGGCCAITICCCAGAGIGGCACGCGITAITCAGACITTACALCACACTAGIAAC 943	y 944 CCACTGAAAGTGGCCAAGAAGGTTGCCCACCTGGCTGGATGCAACACACAC	1004		QY         1124 CCTGTGGTGGATGGTGATCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGAAG 1183           Db         1408 CCTGTGGTGGTGGTGATCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGGAAG 1467	OY 1184 GITTCATCTGTGCCCTACCTTCTAGGTGTCAACAACCTGGAATTCAATTGCCTCTTGCCT 1243  Db 1468 GITTCATCTGTGCCCTACCTTCTAGGTGTCAACAACCTGGAATTCAATTGCTCTTGCCT 1527	OY 1244 TATATCATGAAGTTCCCGCTAAACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATG 1303	Db 1528 TAT 1530 OV 1304 CTCTGGAGTACCGGACCCTGTTGAATATCACCAAGGAGGAGGTACCACTTGTGGTGGAG 1363		OY         1364 GAGTACCTGGACAATGTCAATGAGCATGACTGGAAGATGCTACGAAACCGTATGATGACT         1423           Db         1567 GAGTACCTGGACAATGTCAATGAGTAGACTGGAAGATGCTACGAAACCGTATGATGGAC         1626	Oy 1424 ATAGTTCAAGATGCCACTTTGGTATGCCACACTGCAGACTGCTCACTACCACGAGAT 1483	1484 GCCGGCCTCCTGTCTACCTGTATGAATTTGAGCACCACGCTCGTGGAATAATCGTCAAA 1	1684	OY 1544 CCCCGCACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGCCCCTTC 1603	1604 GCCACAGGCCTTTCCATGGGTAAGGAGAAGGCACTTAGCCTCCAGATGATGAAATACTGG	Db 1684 1683	OY 1664 GCCAACTITGCCCGCACAGGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC 1723  Db 1684GAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC 1724	1724	OY 1784 GAGAAGAAGAAGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGG 1843	1844	

PR 02-ULL-1996, 98178-0031626P.  PR 20-ULL-1996, 98178-0031628P.  PR 20-ULL-1996, 98178-003162P.  PR 11-MC-1996, 98178-003162P.  PR 11-MC-1996, 98178-003163P.  PR 11-MC-1996, 98178-003649P.  PR 26-MC-1996, 98178-003974P.  PR 10-SEP-1996, 98178-003974P.  PR 11-SEP-1996, 98178-003974P.  PR 11-SEP-1996, 98178-003974P.  PR 11-SEP-1996, 98178-003974P.  PR 12-SEP-1996, 98178-003974P.  PR 26-SEP-1996, 98178-003974P.  PR 26-SEP-199	01-OCT-1998;  uery Match est Local Simila atches 1446; Co 224 GGTGC 224 GGTGC 388 CGTGC 284 CAGAT 448 CAGAT
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PR 24-JUN-1998 9 80US-0099528₽.

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PR 24-JUN-1998 9 80US-009963₽.

PR 25-JUN-1998 9 80US-009963₽.

PR 17-AUG-1998 9 80US-009963₽.

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tumour necrosis factor alpha, chondrocyte cell, tumour, gene therapy,
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868 CCGGGAGGCCCTTCATCGTGGGCGCTCTTCGTACGAGGCTCTGACTTGGCCGCC 927	644 CGCGAGAAAGTGGTGCTGGTGTTTCTGCAGCACAGGCTCGGCATCTTCGGCTTCCTGAGC 703	704 ACGACGACACGCGCGCGGGAACTGGGGGCTGCTGGACCAGATGGCGGGCTCTGCGC 763	764 TGGGTGCAGGAGAACATCGCAGCCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 823 	824 CAGTCGGCGGGGCCATGAGCATCTCAGGACTGATGATGTCACCCCTAGCCTCGGGTCTC 883	884 TICCAICGGGCCAITICCCAGAGIGGGACGGGTIATICAGACTITICAICACIAGIAAC 943	944 CCACTGAAAGTGGCCAAGAAGGTTOCCCACCTGGTTGCAACCACAACAGCACACAG 1003	1004 ATCTGGTAAACTGCCTGAGGGACTATCAGGGACCAAGGTGATGCTGTGTCCAACAAG 1063	ATGAGATTCCTCCAACTGAACTTCCAGAGAGACCCGGAAGAGATTATCTGGTCCATGAGC ATGAGATTCCTCCAACTGAACTTCCAGAGAGACCCGGAAGAGATTATCTGGTCCATGAGC	1124 CCTGTGGTGGATGGTGATGGTGATCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGAAG 1183	GTTTCATCTGTGCCCTACCTTCTAGGTGTCAACACCTGGAATTCAATTGGCTCTTGCCT 124		1528 TAT 1530	1304 CTCTGGAGTACCCGCACCTGTTGAATATCACCAAGGAGCAGGTACCACTTGTGGTGGAG 1363	1364 GAGTACCTGGACAATGTCAATGAGCATGACTGGAAGATGCTACGAAACCGTATGATGGAC 1423 	1424 ATAGTICAAGATGCCACTTICGTGTATGCCACACTGCAGACTGCTCACTACCACCGAGAT 1483 1627 ATAGTICAAGATGCCACTTICGTGTATGCCACACTGCAGACTGCTGCTCACTACCACCGA 1683		1684 1683	1544 CCCCGCACTGATGGGGCAGACCATGGGGATGAGTGTACTTCCTCTTTGGGGGCCCCTTC 1603	100	1604 GCCACAGGCCTTTCCATGGGTAAGGAAGAAGGCACTTAGCCTCCAGATGATGAAATACTGG 1883	GCCAACTTTGCCCGCACAGGAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC 17
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PR 26-JUN-1998; 98US-0010523P.
PR 01-JUL-1998; 98US-0010522P.
PR 02-JUL-1998; 98US-0091626P.
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PR 17-AUG-1998; 98US-0091622P.
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PR 26-AUG-1998; 98US-009163P.
PR 26-AUG-1998; 98US-009163P.
PR 26-EP-1998; 98US-009163P.
PR 26-EP-1998; 98US-009100144P.
PR 27-SEP-1998; 98US-009100144P.
PR 28-SEP-1998; 98US-009100144P.
PR 28-SEP-1998; 98US-0100144P.
PR 28-SEP-1998; 98US-0100139P.
PR 28-SEP-1998; 98US-0100139P.
PR 28-SEP-1998; 98US-01010384P.
PR 28-SEP

	1408 CCTGTGGGGGGGGGGGGGGGGGGCCCTTGGGGGGGCCCTGGGGGG
CAGATGCATGTGGGGGAAGACCCCATCCAAGTCTTTTTAGGAGTCCCCTTCTCCAGACCT 343	1468 GTTTCATCTGCGCCTACCTTCTAGGTGTCAACAACCTGGAATTCAATTGGCTCTTGCCT 1527 1244 TATATCATGAAGTTCCCGGTAAACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATG 1303
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OY	CTCTGGAGTACCCGCACCCTGTTGAATATCACCAGGAGCAGGTACCACTTGTGGTGGAG 13
	1364 GAGTACCTGGACATGTCAATGAGCATGACTGGAAGATGCTACGAAACCGTATGATGGAC 142. 
10.000000000000000000000000000000000000	1424 ATAGTICAAGATGCCACTITCGTGTATGCCACACTGCAGACTGCTCACTACCACCAGGAT 148:
GCACGATCTCGGCTCACTGCAACCTCCGGCTTCCAAGCGAGTCTCCTGCCTCAG 687	GCCGGCCTCCCTGTCTACCTGTATGAGTTTGAGCACCACGCTCGTGGAATAATCGTCAAA 15
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STACGCGCGGGCGCGCGCCCGGGGATCCCCAGCTGCCAGTGATGGTCTGGTTC	1664 GCCAACTTTGCCCGCACAGGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC 172. 1684GAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTAC 172.
CTCTGACT	1724 AACAAGGATGAAAAGTACCTGCAGATTTTACCACAAGAGTGGSCATGAAGCTCAAG 1783 
CTCGGCAT	1784 GAGAAGAAGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGG
CGGACGACACGCGCGCGGGAACTGGGGGCTGCTGGACCAGATGGCGGCTCTGCGC GGGTGCACGGAAATGTCGCAGCCTTCGGGGGAACCCAGGAAATGTGACCCTGTTCGGC	1844 CAATTCTAAGGGTGGCTATGCAGGAGGCCAAAGAGGGGTTTGCCCCCACCATCCAGG 1903
B TGGGTGCAGGAGAAACTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 1107 Qy	1904 CCCTGGGGGAGTTAGCCATGGAGGACAAGAGTTCTACCCA 1952 
TTCCATCGGGCCATTTCCCAGAGTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAAC 943	T 15 378 ACC89378 standard; cDNA; 2456 BP.
XX 4 CCACTGAAAGTGGCCAAGAAGGTTGCCACCTGGCTGGATGCAACCACAACAGCACACAG 1003 AC	ACC89378; 11-AUG-2003 (first entry)
TCCTGGTAAACTGCCTGAGGGCACTATCAGGGGACCAAGGTGATGCGTGTGTCCAAGAG 1063	Human secreted polypeptide PRO873-encoding cDNA, SEQ ID NO:57.
TGCCTGAGGCACTATCAGGGACCAAGGTGATG	Human, PRO; secreted protein, transmembrane protein, extracellular domain, tumour necrosis factor-alpha, TNF-alpha; chondrocyre; proliferation, differentiation, cartilage disorder; hone disorder, arthritis, snorts intury, cancer; tumour; diagnosis;

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   adrenal tumour; lung; colon; breast; prostate; kidney; rectum; cervix; liver; drug screening; transgenic animal; genetic analysis; antiarthritic; vulnerary; gene therapy; gene; ss.
                                                                                                                                                                                            9705-0059263P

9705-0059266P

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9705-00831499P

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                                                                                                 US2003027264-A1.
                                                                  Homo sapiens.
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qq	1684	1683
ά	1664 GC(	1664 GCCAACTTTGCCCGCACACGCAAATGATGGGAATCTGCCCTGCTGCCGCGCTAC 1723
QQ	1684	
à	1724 AAC	1724 AACAAGGATGAAAAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGCATGAAGCTCAAG 1783
qq	1725 AAC	1725 AACAAGGATGAAAAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGCATGAAGCTCAAG 1784
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à	1904 CCC	CCCTGGGGAGACTAGCCTGGGACATACCTGGGGACAAGAGTTCTACCCA 1952
ΩÞ	1905 CCC	1905 CCCTGGGGAGACTAGCCTAGGACATACCTGGGGACAAGAGTTCTACCCA 1953

Search completed: August 11, 2004, 11:27:00 Job time : 833.458 secs

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US-10-001-227-1 1983 1 cctttagccaattcggccga.....gtttaaacctgcaggactag 1983 Title: Perfect score:

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IDENTITY NUC Gapop 10.0 , Gapext 1.0 Scoring table:

682709 segs, 277475446 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

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Sequence 3, Application US/09264737A

Sequence 3. Application US/09264737A

Patence 1.

Patence 1.

APPLICANT: Feng, Paul C.C.

APPLICANT: Feng, Paul C.C.

APPLICANT: Faulf, Thomas G.

TITLE OF INVENTION: Engineering Plant Resistance to Pyridines via TITLE OF INVENTION: Expression of Esterase Enzymes

TITLE OF INVENTION: Expression of Esterase Enzymes

FILE OF INVENTION WOMBER: US/09/264,737A

CURRENT APPLICATION WOMBER: US/09/264,737A

EARLIER PILING DATE: 1999-03-10

NUMBER OF SEQ ID NOS: 11

SOGTWARE: PatentIn Ver. 2.0

SEQ ID NO 3

LENGTH: 1701
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21.4%; Score 424; DB 3; Length 1701;
Best Local Similarity 57.0%; Pred. No. 4e-106;
Matches 860; Conservative 0; Mismatches 635; Indels 15
                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Rabbit
US-09-264-737-3
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o o o	CAGAGTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAACCCACTGAAAGTGGCCAAGAGTGGCCACGCGCGCCCACGCGCACGCGCGCCCCCTTTCCAGCACGCAC		TITLE OF INVENTION: 53010, A MOVEL HUMAN CARBOXYLESTERASE TITLE OF INVENTION: FAMILY MEMBER AND USES THEREOF FILE REFERENCE: 10449-122001 CURRENT APPLICATION NUMBER: US/10/023,515 CURRENT FILING DATE: 2001-12-18 PRIOR APPLICATION NUMBER: 60/256,369 PRIOR PILING DATE: 2000-12-18 PRIOR PILING DATE: 2000-12-18
9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1022 AGGCACTATCAGGGACCAAGGTGATGCGTGTGTCCAACAAGATGAGATTCCTCCAACTG 1081	S)	PRIOR NUMBEI SOFTWI SEQ ID LENGI TYPE ORGAN
දු පු	1142 GTGATCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGGAAGGTTTCATCTGTGCCCTAC 1201 		Query Match 13.8%; Score 272.8; DB 4; Length 1746; Best Local Similarity 53.0%; Pred. No. 9.9e-65; Matches 812; Conservative 0; Mismatches 627; Indels 93; Gaps 7;
Sp 6y	1202 CITCTAGGIGICAACAACCIGGAATICAATIGGCICTIGCCITATAICAIGAAGTICCCG 1261 	& 43 	305 CCCATCCAAGTCTTTTAGGAGTCCCCTTCTCCAGACCTCCTCTAGGTATCCTCAGGTTT 364
g g	1262 CTAAACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATGCTCTGGAGTACCCGC 1318 	À 43	365 GCACCTCCAGAACCCCGGAGCCCTGGAAGGAATCAGAGATGCTACCACCTACCGCCT 424  235 ACGAACCGGAGCCTGGCATCGCCTGGGATAACTTGCGAGAAGCCACCTCCTACCTA
6 9	1319 ACCTGTIGAAHATCACCAAGGACAGGTACCACTTGTGGTGGAGAGTACCTGGACAAT 1378 	λο q <sub>0</sub>	425 GGGTGCCTGCAGGAGTCCTGGGCCAGCTGGCCTCGATGTAGGTCAGCACGGGAACGG 484  [
OY Db	1379 GTCAATGAGCATGACTGGAAGATGCTACGAAACCGTATGATGGACATAGTTCAAGATGCC 1438 	& &	485 TACAAGTGGCTGCGCTTCAGCGAGGACTGTCTGTACCTGAACGTGTACGGCCGGC
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Qy Db	1499 TACCTGTATGAATTTGAGCACCACGCTCGTGGAATAATGGTCAAACCCGGACTGAT 1555 	λ <sub>ο</sub> α	605 GGGGCTGCTTCTTCGTACGAGGGCTCTGACTTGGCCGCCGCGGAGAAAGTGGTGGTG 664
ò q	1556 GGGCCACACCATGGGGATGAGATGTACTTCCTCTTTGGGGGCCCCTTCGCCACAGGCCTT 1615 1393 ATAGGGGACCATGCAGATGAGATCTCTTCTGTCTTAGGAGCCCCGTTTTTAAAAGAGGGT 1452	که م <sub>د</sub>	665 TITCIGCAGCACAGGCICGGCAICTICGGCTICCIGAGCACGGACGACGACGACGCGCGC 724
රු සි	1616 TCCATGGGTAAGGAAGGCACTTAGCCTCCAGATGATGAAATACTGGGCCAACTTTGCC 1675	· 영	725 GGGAACTGGGGGCTGCTGGACCAGATGGCGGCTGCTGGGTGCAGGAGAACATCGCA 784
op oo	1676 CGCACAGGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTACAACAAGGATGAA 1735 	· 영	785 GCCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGCCAGTCGGCGGGGCCATGAGC 844
ķ,	1736 AAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGCATGAAGCTCAAGGAGAAGAAGATG 1795		845 ATCICAGACTGATGATGTCACCCCTAGCCTCGGGTCTCTTCCATCGGGCCATTTCCCAG 904

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APPLICANT: Curtis, Rory A. J.
APPLICANT: Silos-Santiago, Inmaculada
TITLE OF INVENTION: 53100, A NOVEL HUMAN CARBOXYLESTERASE
TITLE OF INVENTION: FAMILY MEMBER AND USES THEREOF
FILE REFERENCE: 10448-122001
CURRENT APPLICATION NUMBER: US/10/023,515
CURRENT PILING DATE: 2001-12-18
PRIOR RILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
SPIOR FILING DATE: 2001-12-18
SPIOR FILING DATE: 2001-12-18
SPIOR FILING DATE: 2001-13-28
SOFTWARE: FASTESC FOR WINDOWS VERSION 4.0
SEQ ID NOS: 6
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Best Local Similarity 53.0%;
Matches 812; Conservative
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NAME/KEY: CDS

; LOCATION: (96)...(1838)

US-10-023-515-1
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ORGANISM: Homo sapiens
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RESULT 3
US-10-023-515-1
Sequence 1, Application US/10023515
Patent No. 6664091
GENERAL INFORMATION:

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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: EN PC Compatible
OPERATIONS SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/732,962A
FILING DATE: 1991072
CLASSIFICATION NUMBER: 28,678
RETERENCE/DOCKET NUMBER: 39304/JPW/LSW
TELEPANE: (212) 977-9550
TELEFANE: (212) 664-0525
TELEX: (212) 664-0525
TELEX: (212) 664-0525
TELEX: CHARACTERISTICS:
LENGTH: 1845 base pairs
TYPENGTHER ACTIONS
TYPENGTHER ACT
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Pred. No. 1.3e-30;
0; Mismatches 693;
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| Patent No. 5248604
| GENERAL INFORMATION:
| TITLE OF INVENTION: EXPRESSION OF FITLE OF INVENTION: RECOMBINANT HUNNERS OF SEQUENCES: 2
| CORRESPONDER ADDRESS: CORRESPONDER DADRESS: 30 CORRESPONDER DADRESSE: 5TREET: 30 Rockefeller Plaza | CITY: New York | CITY: New York | COUNTRY: USA
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TBM FC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/06106
FILING DATE: 1992072
CLASSIFICATION WINDER: PCT/US92/06106
FILING DATE: 1992072
CLASSIFICATION NUMBER: 23504-B-PCT/JPW/EAB
TTORNEY/AGENT INFORMATION:
NAME: White, John P.
REGISTRATION NUMBER: 39304-B-PCT/JPW/EAB
TELECOMMUNICATION INFORMATION:
TELEC
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Pred. No. 1.3e-30;
0; Mismatches 693;
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Best Local Similarity 48.3%;
Matches 680; Conservative
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PCT-US92-06106-1
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AND USES THEREOF
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GENERAL INFORMATION:
APPLICANT: Fischer, Meir
TITLE OF INVENTION: ENZYMATICALLY ACTIVE REC;
TITLE OF INVENTION: ENZYMATICALLY ACTIVE REC;
TITLE OF INVENTION: ACETYLCHOLINESTERASE AND
CORRESPONDENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: John P. White, Esq.
STREET: 30 Rockefeller Plaza
CITY: New York
STATE: New York
STATE: New York
COUNTRY: USA
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                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/318,826A
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48.3%; Pred. No. 1.4e-30;
iive 0; Mismatches 693;
                                                                                                                             COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                    FILING DATE:
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Kohn, Kenneth I.
REGISTRATION NUMBER: 30,955
REFERENCE/OCKET UNBER: 2391
TELEPHONE: (248) 539-5050
INFORMATION: (248) 539-5055
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 2256 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: CDNA to mRNA HYPOTHETICAL: NO
                                            ZIP: 48334
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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Best Local Similarity 48.3
Matches 680; Conservative
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Michigan
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Sequence 5. Application US/08318826A

Patent No. 5891725

GENERAL INFORMATION:

APPLICANT: Sakut, Haim

APPLICANT: Ecketein, Fritz

TITLE OF INVENTION: Synthetic Antisense

TITLE OF INVENTION: Oligodeoxynucleotides and Pharmaceutical Compositions

TITLE OF INVENTION: Ontaining Them

NUMBER OF SEQUENCES: 9

CORRESPONDENCE ADDRESS:

ADDRESSES: Kohn & Associates

ADDRESSES: Kohn & Associates

STREET: 30500 No. 5891725thwestern Hwy., Suite 410

CITY: Farmington Hills
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896 ATTICCCAGAGIGG-----CACCGCGTTATICAGACTITICATCACTAGTAACCCACTG 949
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2256;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/370,156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 148.2; DB 2;
Pred. No. 1.4e-30;
0; Mismatches 693;
                                                                                                                                                                                                                                                                                                ZIP: 48099
COMPUTER REABABLE FORM:
MEDIUM TYPE: Floppy disk
CMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                          E: Reising, Ethington, P.O. Box 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: KOADH, KERNECH I.
REGISTRATION NUMBER: 30,955
REFERENCE/DOCKET NUMBER: P-307
TELECOMMUNICATION INFORMATION:
TRLEPHONE: (910) 689-3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 2256 base pairs TYPE: nucleic acid STRANDEDNESS: single
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ilarity 48.3%;
Conservative (
                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: Reising, E
    NUMBER OF SEQUENCES
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Best Local Simi
Matches 680;
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    867
AACGTGGCAGCCTTCGGGGGTGACCCCGACATCAGTGACGCTGTTTGGGGAGGGGCGCGGGA
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APPLICANT: Soreq, Hermona
APPLICANT: Zakut, Haim
APPLICANT: Shani, Moshe
TITLE OF INVENTION: TRANSGE
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US-08-370-156-1
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': 30500 No. 6025183thwestern Highway, Suite 410
Farmington Hills
Michigan
Y: U.S.
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FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: MONDEGOMENY, Ilene N.
REGISTRATION NUMBER: 38,972
REFERENCE/DOCKET NUMBER: 2391.00066
TELECOMMUNICATION INFORMATION:
TELEPHONE: (248) 539-5050
TELEFAX: (248) 539-5050
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 2256 base pairs
TYPE: NUCLEIC ACIG
STRANDEDNESS: Single
TYPE: OLD CHARACTERISTICS:
LENGTH: 2256 base pairs
TYPE: OLD CHARACTERISTICS:
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Pred. No. 1.4e-30;
0; Mismatches 693;
                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
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Patent No. 6025183
GENERAL INFORMATION:
APPLICANT: Soreq, Hermona
APPLICANT: Zakut, Haim
APPLICANT: Zakut, Haim
APPLICANT: Shain, Mosha
TITLE OF INVENTION: ANTI-CHOLINESTERASE SUBSTNACES
TITLE OF INVENTION: ANTI-CHOLINESTERASE SUBSTNACES
CORRESPONDENCES 7
CORRESPONDENCE ADDRESS:
ADDRESSEE: KOHN & ASSOCIATES
             AACTITGCCCGCACAGGAAACCCCAATGA 1695
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OTHER INFORMATION: /note= "Splice Variant: Exons 1,
OTHER INFORMATION: 3, 4, 5 and 6"
                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: PED Floppy disk
COMPUTER: PED PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/318,826A
                                                                                                    Suite
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  Oligodeoxynucleotides and Containing Them
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Pred. No. 1.6e-30;
                             ...ukESS:
...ukESS:
...kohn & Associates
STREET: 30500 No. 5891725thwestern HWY.,
CITY: Farmington Hills
STATE: Michigan
COUNTRY: US
                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: KÖDIN, KEDNEKH: 30,955
REFERENCE/DOCKET NUMBER: 2391.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (248) 539-5050
INFORMATION FOR SEQ ID NO: 7: SEQUENCE CHARACTERISTICS:
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Best Local Similarity 48.33
Matches 680; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: nucleic acid
STRANDEDNESS: double
TITLE OF INVENTION: CO NUMBER OF SEQUENCES: 9 CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
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NAME/KEY:
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  868 GCCGCCTCGGTGGGCATGCACCTGCTGTCCCCGCCCAGCCGGGGCCTGTTCCACAGGGCC
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Patent No. 5891725
GENERAL INPOMATION:
APPLICANT: Soreq, Hermona
APPLICANT: Sakut, Haim
APPLICANT: Eckstein, Fritz
TITLE OF INVENTION: Synthetic Antisense
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                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Soreq, Hermona
APPLICANT: Soreq, Hermona
APPLICANT: Zakut, Moshe
TITLE OF INVENTION: TRANSGENIC ANIMAL ASSAY SYSTEM FOR
TITLE OF INVENTION: ANTICHOLINESTERASE SUBSTANCES
NUMBER OF SUBCURSES:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Version #1.30
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Pred. No. 1.6e-30;
0; Mismatches 693;
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ATTORNEY/AGENT INFORMATION:
NAME: ROAD. Kenneth I.
REGISTRATION NUMBER: 30,955
REFERENCE/DOCKET NUMBER: P-307 (Mulford)
TELECOMMUNICATION INFORMATION:
TELEPHONE: (810) 689-4071
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 3016 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/370,156
FILING DATE:
US-08-370-156-5; Application US/08370156; Patent No. 5932780
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STREET: 30500 No. 6025183thwestern Highway, Suite 410
CITY: Farmington Hills
COUNTRY: Michigan
COUNTRY: U.S. Indels APPLICANT: Soreq, Hermona
APPLICANT: Zakut, Haim
APPLICANT: Shani, Moshe
TITLE OF INVENTION: TRANSGENIC ANIMAL ASSAY SYSTEM
TITLE OF INVENTION: ANTI-CHOLINESTERASE SUBSTNACES
NUMBER OF SEQUENCES: 7 spliced AChE 4, 5 and 6" COMPOURER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/814,095
FILING DATE: Score 148.2; DB 3; Pred. No. 1.6e-30; 0; Mismatches 693; TOPOLOGY: linear
MOLECULE TYPE: other nucleic acid
DESCRIPTION: /desc = "Alternatively
DESCRIPTION: comprising exons 2, 3, Sequence 5, Application US/08814095 Patent No. 6025183 GENERAL INFORMATION: CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: MONTGOMERY, Ilene N.
REGISTRATION NUMBER: 38,972
REFERENCE/DOCKET NUMBER: 2391
TELECOMMUNICATION INFORMATION:
TELEFRANE: (248) 539-5055
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 3016 base pairs 7.5%; Query Match 7.55 Best Local Similarity 48.33 Matches 680; Conservative ORGANISM: Homo sapiens TYPE: nucleic acid STRANDEDNESS: single CORRESPONDENCE ADDRESS: 160..2010

us-10-001-227-1.rni

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STREET: 35500 No. 5891725thwestern Hwy.,
CITY: Farmingcon Hills
STATE: Michigan
1696 AACTTTGCCCGCACAGGGGATCCCAATGA 1724
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                                                                                                                                                                             Sequence 6, Application US/08318826A Patent No. 5891725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 514
ATTORNEY AGENT INFORMATION:
NAME: Kohn, Kenneth I.
REGISTRATION NUMBER: 30,955
REFFERENCE/DOCKET NUMBER: 2391.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (248) 539-5050
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
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Best Local Similarity 48.3%;
Matches 680; Conservative
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ORIGINAL SOURCE:
ORGANISM: Homo sapiens
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APPLICATION NUMBER: US
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  double
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MOLECULE TYPE: O
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                                                                                                                      CTGGTGTTTCTGCAGAGAGGCTCGGCATCTTCGGCTTCCTGAGCACGGACGACAGCC--
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OTHER INFORMATION: /note= "Splice variant: Exons 1, 2, OTHER INFORMATION: 3, 4, 5 and the translated portion of Intron 4 (readthrough)" US-08-318-826A-6 GENERAL INFORMATION:
APPLICANT: Soreq, Hermona
APPLICANT: Screy, Hermona
APPLICANT: Eckstein, Fritz
TITLE OF INVENTION: Synthetic Antisense
TITLE OF INVENTION: Oligodeoxynucleotides and Pharmaceutical Compositions
TITLE OF INVENTION: Containing Them
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Kohn & Associates æ 334 cergierergerirecradecarecerrirecasaceaecearecareceaeceeecerrir 393 453 365 GCACCTCCAGAACCCCCGGAGCCCTGGAAAGGAATCAGAGATGCTACCACATACCGCCT 424 394 creccaccedaeccaaecaeccricercaecerecraeacecraeaecrincaeaer GGGTGCCTGCAGGAGTCCTGGGGCCAGCTGGCCTCGATGTACGTCAGCACGCGGGAACGG CCCATCCAAGTCTTTTAGGAGTCCCCTTCTCCAGACCTCCTCTAGGTATCCTCAGGTTT Gaps 36; Length 3096; Indels COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30 Suite Score 148.2; DB 2; Pred. No. 1.6e-30; 0; Mismatches 693;

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TGGATGGGGGTGCCCACGGCTACGAGATCGAGTTCATCTTTGGGATCCCCTGGACCC 1635
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Zakut, Haim
APPLICANT: Zakut, Haim
APPLICANT: Shani, Moshe
TITLE OF INVENTION: TRANSGENIC ANIMAL ASSAY SYSTEM FOR
TITLE OF INVENTION: ANTICHOLINESTERASE SUBSTANCES
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: Reising, Ethington, Barnard & Perry
STRREST: P.O. Box 4390
CITY: Troy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/370,156
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Pred. No. 1.6e-30;
0; Mismatches 693;
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ATTORNEY AGENT INFORMATION:
REGISTRATION NUMBER: 30,955
REFERENCE/OCKET NUMBER: 9-30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (810) 689-3500
                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
US-08-370-156-3
Sequence 3, Application US/08370156;
Patent No. 5932780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 48099
COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
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Local Similarity 48.3%;
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INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
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; LOCATION:
US-08-370-156-3
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Pred. No. 1.6e-30;
0; Mismatches 693; Indels
                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: other nucleic acid
DESCRIPTION: /desc. = "Alternatively spliced AChE
DESCRIPTION: comprising exons 2, 3, 4 and 5 as well
DESCRIPTION: of Intron 4 (readthrough)"
                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Soreq, Hermona
APPLICANT: Sakut, Haim
APPLICANT: Shani, Moshe
TITLE OF INVENTION: TRANSGENIC ANIMAL ASSAY SYSTEM
TITLE OF INVENTION: ANTI-CHOLINESTERASE SUBSTNACES
NUMBER OF SEQUENCES:
ADDRESSEE: KOHN & ASSOCIATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOUTWARE: Patentin Release #1.0, Version #1.30.
CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/814,095
                                                                                                                                                         AACTITIGCCGCACAGGGATCCCAATGA 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: MOLIGOMETY, Ilene N.
REGISTRATION NUMBER: 38,972
REFERENCE/DOCKET NUMBER: 2391.00066
TELECHONE: (248) 539-5050
TELEPHONE: (248) 539-5055
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 3096 base pairs
                                                                                                                                                                                                                                                                   Sequence 3, Application US/08814095
Patent No. 6025183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
SOFTWARE: PatentIn Release #
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ilarity 48.3%;
Conservative
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Best Local Similarity
Matches 680; Conservat
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TOPOLOGY: 11
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, LOCATION:
US-08-814-095-3
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US-08-814-095-3
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                        1490 CTCCCTGTCTACCTGTATGAATTTGAGCACCACGCTCGTGGAATAATCGTCAAACCCCGC 1549
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APPLICANT: Sored, Hermona
APPLICANT: Sored, Haim
APPLICANT: Zakut, Moshe
TITLE OF INVENTION: ANTI-CHOLINESTERASE SUBSTNACES
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: KOHN & ASSOCIATES
STREET: 30500 No. 6025183thwestern Highway, Suite 410
CITY: Parmington Hills
STATE: Michigan
COUNTRY: U.S.
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NAME/KEY: promoter
LOCATION: 4089..22464
OTHER INFORMATION: /function= "ACHE Promotor"
OTHER INFORMATION: /standard_name= "ACHE Promotor"
FEATURE:
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promotor, ACHE gene and ARS gene"
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COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: BAY PC compatible
COMPUTER: PROME PC - DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver
CUBRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/814,095
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CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: MOALGOMERY, Ilene N.
REGISTRATION NUMBER: 38,972
REFERENCE/DOCKET NUMBER: 2391.
TELECOMMUNICATION INFORMATION:
TELEFAX: (248) 539-5050
TELEFAX: (248) 539-5055
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 3506 base pairs
TYRE: nucleic acid
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 7, Application US/08814095
Patent No. 6025183
GENERAL INFORMATION:
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MOLECULE TYPE: other nucleic
DESCRIPTION: /desc = "COSMI
DESCRIPTION: __promotor, ACHE
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ORGANISM: Homo sapiens
POSITION IN GENOME:
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ANTI-SENSE: N
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US-08-814-095-7
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OTHER INFORMATION: /gene= "AR"
OTHER INFORMATION: /number= 7
FEATURE: OTHER INFORMATION: /gene= "AR"
OTHER INFORMATION: /number= 5
NAME/KEY: exon
LOCATION: complement (32959..33094)
OTHER INFORMATION: /gene= "AR"
OTHER INFORMATION: /muber= 6 LOCATION: complement (31894..32080)
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NAME/KEY: exon LOCATION: complement (31363..31534)
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425 GGGTGCCTGCAGGTCCTGGGCCCAGCTGGCCTCGATGTACGTCAGCACGCGGGAACGG 484

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545 GCGCCCGGGGGATCCCCACTGCCAGTGATGGTCTGGTTCCCGGGAGGCCCTTCATCGG 604
24521 CGGCC--TACATCCCCCACCCTGTCTCTGTGTGGATCTATGGGGGTGGTTCTAAGT 24577
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## SUMMARIES

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; CURRENT FILING DATE: 2001-11-30
; PRIOR APPLICATION NUMBER: 60/250929
; NUMBER OF SED ID NOS: 7
; SOFTWARE: FastSEQ for Windows Version 4.0
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121 CACAGIGATICCOATCACTCCTCCACACACACACACACACACACACACAC	961 GAAGGTTGCCCACCTGGCTGGATGCAACCACACACACACA

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APPLICANT: WARREN, Bridget A.; YANG, Junming; APPLICANT: YAO, Monique G.; YUE, Henry ITLE OF INVENTION: DRUG METABOLIZING ENZYMES FILE BEFERENCE: PT-0185 USN CURRENT APPLICATION NUMBER: US/10/343,593 CURRENT FILING DATE: 2003-01-29 PRIOR FILING DATE: 2003-01-29 PRIOR PRIOR APPLICATION NUMBER: US 60/223,055 PRIOR FILING DATE: 2000-08-04 PRIOR PAPLICATION NUMBER: US 60/224,728 PRIOR APPLICATION NUMBER: US 60/224,728 PRIOR APPLICATION NUMBER: US 60/226,440 200-08-11 PRIOR APPLICATION NUMBER: US 60/222,244 PRIOR FILING DATE: 2000-08-24 PRIOR FILING DATE: 2000-08-31 PRIOR FILING DATE: 2000-08-31 PRIOR PAPLICATION NUMBER: US 60/230,063 PRIOR FILING DATE: 2000-09-13 PRIOR PAPLICATION NUMBER: US 60/232,244 PRIOR PAPLICATION NUMBER: US 60/234,269 PRIOR PLING DATE: 2000-09-13 PRIOR PLING DATE: 2000-09-13 PRIOR PLING DATE: 2000-09-16 SOFTWARE: PEEL PROGRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1928.6;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                            ; FEATURE:
; NAMB/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No: 7478588CB1
US-10-343-593-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97.3%;
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Best Local Similarity 99.8
Matches 1931; Conservative
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301 ATCAGAGATGCTACCGGCCTGGGTGCTGCAGGAGTCCTGGGGGCTGCCGGGGCTGCCGGGGCTGCCGGGGCTGCCGGGGCTGCCTGGGGGCTGCT	0
1698   GGAATCTGCCCTGCTGCCACGCTACAACAAGGATGAAAAGTACCTGCAGCTGCATTTA   1757	10. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.

	CGGGGGAAAAACCCAGGAAAAAAAAAAAAAAAAAAAAAA	506 CGGGGGGGAGACCCAGGAAATGTGACCCTGTTCGGCCAGGTCGGGGGGGCGATTGCGAGAGTGGGGGGATTGCGAGAGTGGGGGGATTGCGAGAGTGGGGGGGG	566 AGGACTGATGATGTCACCCCTAGGGTCTCTTCCATCGGGCCATTTCCAGAGTGG 625	910 CACCGCGTTATTCAGACTTTTCATCACTAGTAACCCACTGAAAGTGGCCAAGAAGGTTGC 969	COCCHGGCTGGCTGCAACACACACACACACACAGATCCTGGTAAACTGCTGAGGGCACT 1	686 CCACCTGGCTGGATGCAACCACCACACACACACACACACA	ATCAGGGACCAAGGTGATGCGTGTGTGTCCAACAAGATGAGATTCCTCCAACTGAACTTCCA	1090 GAGAGACCCGGAAGATTATCTGGTCCATGAGCCCTGTGGTGGTGGTGTGGTGATCCC 1149	1150 AGATGACCCTTTGGTGCTCCTGACCCGGGGAAGGTTTCATCTGTGCCCTACCTTCTAGG 1209	i210 TGTCAACAACCTGGAATTCAATTGGCTCTTGCCTTATATCATGAAGTTCCCGCTAAACCG 1269	1270 GCAGGCGATGAGAAAGGAAACCATCACTAAGATGCTCTGGAGTACCGGCACCCTGTTGAA 1329 	1330 TATCACCAAGGAGGTACCACTTGTGGTGGAGGAGTACCTGGACAATGTCAATGAGCA 1389	1390 TGACTGGAAGATGCTACGAAACCGTATGATGGACATAGTTCAAGATGCCACTTTCGTGTA 1449 	1450 IGCCACACTGCAGACTGCTCACTACCACCGACATGCCGGCCTCCCTGTCTACCTGTATGA 1509	1510 ATTTGAGCACCACGCTCGTGGAATAATCGTCAAACCCCGCACTGATGGGGCAGACCATGG 1569 	1570 GGAIGAGAIGTACTICCICTITIGGGGCCCCTICGCCAGGCCTTICCAIGGGTAAGGA 1629	1630 GAAGGCACTTAGCCTCCAGATGATGAAATACTGGGCCAACTTTGCCGCACAGGAAACCC 1689 	1690 CAATGATGGGAATCTGCCTGCTGGCCACGCTACAACGATGAAAAGTACCTGCAGCT 1749	1750 GGATITITACCACAAGAGTGGGCATGAAGCTCAAGGAGAAGATGGCTTTTTGGATGAG 1809 	1810 TCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGGCAATTCTAAGGGTGGCTATGCAGGAA 1869
<b>q</b> 0	ð	g ò	qq	δ <sub>γ</sub>	ò	a 8	ਨੇ <sub>ਹ</sub>	\$ g	ර් යි 	ે <sup>ત</sup>	S G	ò q	\$ Q	6 d	oy B	y dd	VQ du	ර් රි	8 &	λ̄σ
Qy 1538 GTCAAACCCCGCACTGATGGGGCAGACCATGGGGGATGAGATGTACTTCCTCTTTGGGGGC 1597	1441 GTCAAACCCGGACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGG	OY 1598 CCTTGGCCACAAGGCTTAGGAAAAAGGAAGAAGGCTCCAGATGATGAAA 1657  Db 1501 CCCTTGGCCACAGGCCTTTCCATGGTAAGGAGAAGAAGGCTTTAGCCTCCAAAGAATGATGAAA 1560	Oy 1658 TACTGGGCCAACTTTGCCGCACAGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCA 1717	Db 1561 TACTGGGCCAACTTTGCCCGCACAGGAAACCCCAATGATGGGAAATCTGCCCTGCTGGCCA 1620	1621 CGCTACAACAAGATAAAAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGCATGAAG		100 100 100 100 100 100 100 100 100 100	Db 1741 CAGAGCAATIC 1752	RESULT 4 US-10-108-260A-339 ; Sequence 339, Application US/10108260A ; Publication No. US20040005560A1	GENERAL INFORMATION: ; APPLICANT: HELIX RESEARCH INSTITUTE ; TITLE OF INVENTION: No. US20040005560Alel full length cDNA ; FILE REPERENCE: HI-A0106	; CURRENT APPLICATION NUMBER: US/10/108,260A ; CURRENT FILING DATE: 2002-03-27 ; NUMBER OF SEQ ID NOS: 5458 ; SOPTWARE: PATENTIN VET. 2.1		73.6%; Score 1459.4; DB 16; Length 2178; nrity 96.4%; Pred. No. 0;	Matches 1526; Conservative 0; Mismatches 1; Indels 56; Gaps 426 GGTGCCTGCAGGAGCCTGGGGCCCAGCTGGCTGGCTGGATGTACGTCAGCACGGGAACGGT	486 ACAAGTGCCTGCGGGGCCCAGGTCTGGCCTCGATGTCACCTCGGGGGGGG	146 ACAAGIGGCIGCGCITCAGCGAGGACIGICIGIACCIGAACGIGIACGGCGCGCGC	206 GGCCGGGGGATCCCCAGCTGCCAGTGATGGTCTGGTTCCGGGAAGGCGCCTTC7 606 GCGCTGCTTCTTCGTACGAGGCTCTCACTTGCCGCCGCGAGAAAGTGGTGC	666 TTCTGCAGCACAGGCTCTGCGCTTCTGCCCGCCGCGGGAAAGGGGGGGG	Db	Db 386 GACCGCGGCTGTGGCCAGAGCGGCGGGGACTGGCACGGACACACAC

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R APPLICATION NUMBER: 60/079091

R APPLICATION NUMBER: 60/079669

R FILING DATE: 1998-03-27

R APPLICATION NUMBER: 60/079663

R APPLICATION NUMBER: 60/079683

R FILING DATE: 1998-03-27

R FILING DATE: 1998-03-27

R FILING DATE: 1998-03-27

R APPLICATION NUMBER: 60/079786

R FILING DATE: 1998-03-27

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R FILING DATE: 1998-04-01
R PILING DATE: 1998-04-01
R APPLICATION NUMBER: 60/080328
R FILING DATE: 1998-04-01
R APPLICATION NUMBER: 60/080333
R FILING DATE: 1998-04-01
R FILING DATE: 1998-04-01
R PILING DATE: 1998-04-01
R APPLICATION NUMBER: 60/081070
R PAPLICATION NUMBER: 60/081070
R APPLICATION NUMBER: 60/081070
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R APPLICATION NUMBER: 60/080105
R FILING DATE: 1998-03-31
R APPLICATION WUMBER: 60/080107
R FILING DATE: 1998-03-31
R APPLICATION NUMBER: 60/080165
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A APPLICATION NUMBER: 60/081071

R FILING DATE: 1998-04-08

A APPLICATION NUMBER: 60/081195

R FILING DATE: 1998-04-08

A APPLICATION NUMBER: 60/081203
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APPLICATION NUMBER: 60/079294
FILING DATE: 1998-03-25
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FILING DATE: 1998-03-26
APPLICATION NUMBER: 60/079664
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APPLICATION NUMBER: 60/081229
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APPLICATION NUMBER: 60/081955
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APPLICATION NUMBER: 60/081819
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APPLICATION NUMBER: 60/081952
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APPLICATION NUMBER: 60/082700
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APPLICATION NUMBER: 60/082704
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APPLICATION NUMBER: 60/
FILING DATE: 1998-04-22
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APPLICATION NUMBER:
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1526 TCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGGCAATTCTAAGGGTGGCTATGCAGGAA 1585
                                                    1870 GGAGCCAAAGAGGGTTTGCCCCCCACCATCCAGGCCCTGGGGAGACTAGCCATGGACATA 1929
                                                                                       1586 GGAGCCAAAGAGGGGGTTTGCCCCCCACCATCCAGGCCCTGGGGAGACTAGCCATGGACATA 1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: TUMES, DATIE:

APPLICANT: Williams, P. Mickey
APPLICANT: Wood, Williams, P. Mickey
APPLICANT: Wood, Williams, P. Mickey
TITLE OF INVENTION: Screted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Screted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2630PIC11
CURRENT APPLICATION NUMBER: U5/99/80,295A
CURRENT FILING DATE: 2001-10-15
PRIOR APPLICATION NUMBER: 60/06226
PRIOR APPLICATION NUMBER: 60/064249
PRIOR FILING DATE: 1997-11-03
PRIOR FILING DATE: 1997-11-03
PRIOR FILING DATE: 1997-11-103
PRIOR FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: 60/06534
PRIOR FILING DATE: 1998-03-10
PRIOR FILING DATE: 1998-03-10
PRIOR FILING DATE: 1998-03-11
PRIOR FILING DATE: 1998-03-11
PRIOR FILING DATE: 1998-03-11
PRIOR FILING DATE: 1998-03-11
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PRIOR PILING DATE: 1998-03-12
PRIOR PILING DATE: 1998-03-11
PRIOR PILING DATE: 1998-03-11
PRIOR PILING DATE: 1998-03-11
PRIOR PILING DATE: 1998-03-11
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                                                                                                                                                             1930 CCTGGGGACAAGAGTTCTACCCA 1952
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Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J.
Kljavin, Ivar J.
Kljavin, Ivar J.
Kljavin, Sophia S.
Napier, Mary A.
                                                                                                                                                                                                                                                                                                                                                       Sequence 253, Application US/09978295A Patent No. US20020156006A1 GENERAL INFORMATION:
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APPLICATION NUMBER: 60/078936
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APPLICATION NUMBER: 60/078004
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Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ferrara, Napoleon
Filvaroff, Ellen
Fong, Sherman
Gao, Wei-Qiang
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Goddard, Audrey
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APPLICANT: Baker Kevin P.
APPLICANT: Botstein, David
APPLICANT: Desnoyers, Luc
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1063 1407 1243 1167 1047 1048 TGGGTGCAGGAGAACATCGCAGCCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGC 1107 TTCCATCGGGCCATTCCCCAGAGTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAAC 1227 627 425 823 883 943 343 507 403 567 425 687 463 747 523 807 583 867 643 927 703 987 763 447 CCTGTGGTGGATGGTGTGGTGATCCCAGATGACCCTTTGGTGCTCCTGACCCCAGGGGAAG ATCCTGGTAAACTGCCTGAGGGCACTATCAGGGACCAAGGTGATGCGTGTGTCCAACAAG TTCCATCGGGCCATTTCCCGGGGTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAAC ATGAGATTCCTCCAACTGAACTTCCAGAGAGCCCGGAAGAGATTATCTGGTCCATGAGC ACGGACGACACCACGCGCGCGCGGGAACTGGGGCTGCTGCAACCAGATGGCGGCTCTGCGC CCTCTAGGTATCCTCAGGTTTGCACCTCCAGAACCCCCGGAGCCCTGGAAAGGAATCAGA 808 AACGIGTACGCGCGCGCGCGCGCGCGCGGGGATCCCCAGCTGCCAGTGATGGTCTGGTTC 868 CCGGGAGGCCCTTCATCGTGGGCCCTGCTTCTTCGTACGAGGGCTCTGACTTGGCCGCC TGGGTGCAGGAGAACATCGCAGCCTTCGGGGGAACCCCAGGAAATGTGACCCTGTTCGGC CAGTCGGCGGGGGCATGAGCATCTCAGGACTGATGATGTCACCCCTAGCCTCGGGTCTC GTTTCATCTGTGCCCTACCTTCTAGGTGTCAACAACCTGGAATTCAATTGGCTCTTGCCT 688 CCICTGAGIGICIGGGGCIACAGGIGCCTGCAGGAGICCTGGGGGCCAGCIGGCCTCGAIG 524 AACGIGIACGCGCCGCGCGCGCCCCGGGAICCCCAGCIGCCAGTGAIGGICTGGTIC CCGGGAGGCGCCTTCATCGTGGCGCTTCTTCGTACGAGGCCTCTGACTTGGCCGCC CAGATGCATGTGGGGAAGACACCCATCCAAGTCTTTTTAGGAGTCCCCTTCTCCAGACCT CAGATGCATGTGGGGAAGACACCCATCCAAGTCTTTTTAGGAGTCCCCTTCTCCCAACCT 628 GCACGATCTCGGCTCACTGCAACCTCCGGCCTCCGGGTTCAAGCGAGTCTCCTGCCTCAG 988 764 1108 944 1228 1004 1288 1064 1348 1124 1408 464 584 704 824 884 1168 1184 508 404 568 426 426 388 284 448 344 8 6 B 6 Sy de Sy g ò 엄 ्ठ qq 8 6 8 6 8 8

APPLICANT: Kuo, Sophia S.  APPLICANT: Napier, Mary A.  APPLICANT: Pan, James;  APPLICANT: Pan, James;  APPLICANT: Pan, Margaret Ann  APPLICANT: Roy, Margaret Ann  APPLICANT: Shelton, David L.  APPLICANT: Stewart, Timothy A.  APPLICANT: Williams, Paniel  APPLICANT: Williams, P. Mickey  APPLICANT: Williams, P. Mickey  APPLICANT: Wood, William I.  TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic  TITLE OF INVENTION: Secreted and Transmembrane Polypeptides FILE REPERENCE: P26.091C27	CURRENT APPLICATION NUMBER: US/09/978,697  CURRENT FILING DATE: 2001-10-16  PRIOR PILING DATE: 2001-10-16  PRIOR FILING DATE: 09/91858  PRIOR FILING DATE: 1097-10-730  PRIOR FILING DATE: 1997-10-17  PRIOR FILING DATE: 1997-11-13  PRIOR FILING DATE: 1997-11-13  PRIOR APPLICATION NUMBER: 60/065311  PRIOR APPLICATION NUMBER: 60/065364  PRIOR APPLICATION NUMBER: 60/065364  PRIOR PILING DATE: 1997-11-21  PRIOR PILING DATE: 1997-11-21  PRIOR APPLICATION NUMBER: 60/067364  PRIOR APPLICATION NUMBER: 60/067364  PRIOR FILING DATE: 1997-11-21  PRIOR APPLICATION NUMBER: 60/00732  PRIOR APPLICATION NUMBER: 60/00732  PRIOR APPLICATION NUMBER: 60/00732	PRIOR APPLICATION NUMBER: 60/07/641  PRIOR PILLING DATE: 1998-03-11  PRIOR PILLING DATE: 1998-03-12  PRIOR FILLING DATE: 1998-03-12  PRIOR PELICATION NUMBER: 60/0701  PRIOR FILLING DATE: 1998-03-12  PRIOR FILLING DATE: 1998-03-20  PRIOR FILLING DATE: 1998-03-20  PRIOR PILLING DATE: 1998-03-26  PRIOR APPLICATION NUMBER: 60/079664  PRIOR PILLING DATE: 1998-03-26  PRIOR APPLICATION NUMBER: 60/079664  PRIOR PILLING DATE: 1998-03-26   PRIOR FILING DATE: 1998-03-27  PRIOR PRILICATION NUMBER: 60/079663  PRIOR PELICATION NUMBER: 60/07928  PRIOR PELICATION NUMBER: 60/07978  PRIOR FILING DATE: 1998-03-27  PRIOR FILING DATE: 1998-03-27  PRIOR FILING DATE: 1998-03-30  PRIOR FILING DATE: 1998-03-30  PRIOR PELICATION NUMBER: 60/07923  PRIOR PELICATION NUMBER: 60/07923  PRIOR PELICATION NUMBER: 60/080105  PRIOR PELICATION NUMBER: 60/080105  PRIOR PELICATION NUMBER: 60/080105  PRIOR PELICATION NUMBER: 60/080107  PRIOR PELICATION NUMBER: 60/080107  PRIOR APPLICATION NUMBER: 60/080165  PRIOR PELICATION NUMBER: 60/080165  PRIOR PELICATION NUMBER: 60/080165  PRIOR PELICATION NUMBER: 60/080165  PRIOR PELICATION NUMBER: 60/080194  PRIOR PELICATION NUMBER: 60/080327  PRIOR PELICATION NUMBER: 60/080327  PRIOR PELICATION NUMBER: 60/080327  PRIOR PELICATION NUMBER: 60/080327	
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     1604 GCCACAGGCCTTTCCATGGGTAAGGAGGAAGGCACTTAGCCTCCAGATGATGAAATACTGG 1663
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Publication No. US20030004102A1
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                                     APPLICANT: Stewart, Timpully
APPLICANT: Tumas, Daniel
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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2630PLC4
CURRENT FILING DATE: 2001-10-15
PRIOR FILING DATE: 2001-07-30
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PRIOR APPLICATION NUMBER: 60/064249
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              Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
Paoni, Nicholas F.
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; PRIOR FILING DATE: 1998-03-13 ; PRIOR APPLICATION NUMBER: 60/078886 ; PRIOR FILING DATE: 1998-03-20 ; PRIOR FILING DATE: 1998-03-20 ; PRIOR PLING DATE: 1998-03-25 ; PRIOR PLING DATE: 1998-03-25 ; PRIOR PLING DATE: 1998-03-25 ; PRIOR PLING DATE: 1998-03-25 ; PRIOR PLING DATE: 1998-03-26 ; PRIOR PLING DATE: 1998-03-26	PRIOR FILING DATE: 1998-03-27 PRIOR APPLICATION NUMBER: 60/07663 PRIOR APPLICATION NUMBER: 60/07963 PRIOR APPLICATION NUMBER: 60/07963 PRIOR APPLICATION NUMBER: 60/07976 PRIOR FILING DATE: 1998-03-27 PRIOR FILING DATE: 1998-03-27 PRIOR FILING DATE: 1998-03-30 PRIOR PILING DATE: 1998-03-30 PRIOR PILING DATE: 1998-03-30 PRIOR PILING DATE: 1998-03-31 PRIOR FILING DATE: 1998-03-31 PRIOR FILING DATE: 1998-03-31 PRIOR FILING DATE: 1998-03-31 PRIOR PILING DATE: 1998-04-01 PRIOR PELING DATE: 1998-04-01 PRIOR PILING DATE: 1998-04-08 PRIOR PLING DATE: 1998-04-08 PRIOR PILING DATE: 1998-04-05 PRIOR PILING DATE: 1998-04-05 PRIOR PILING DATE: 1998-04-15	T ET ET
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APPLICANT: Tumas, Daniel
APPLICANT: Williams, P. Mickey
APPLICANT: Williams, P. Mickey
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REPERENCE: P650991C25
CURRENT APPLICATION NUMBER: US/09/978,564A
CURRENT FILING DATE: 2001-10-16
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PRIOR APPLICATION NUMBER: 60/06449
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              Grimaldi, J. Christopher
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Hillan, Kenneth J
Kljavin, Ivar J.
Kuo, Sophia S.
Napier, Mary A.
Pan, James
Pan, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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Publication No. US20030050241A1
GENERAL INFORMATION:
APPLICANT: Baker, Kevin P.
APPLICANT: Baker, Kevin P.
APPLICANT: Botstein, David
APPLICANT: Botstein, David
APPLICANT: Botstein, David
APPLICANT: Ferrara, Napoleon
APPLICANT: Frivaroff, Ellen
APPLICANT: Foog, Sherman
APPLICANT: Foog, Sherman
APPLICANT: Gerber, Hanspeter
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Best Local Similarity 78.2%; Pred. No. 2.7e-292;
Matches 1446; Conservative 0; Mismatches 0; Indels 403; 404 GAIGCIACCACCIACCCCCCTG------426 -------PRIOR FILING DATE: 1998-05-06
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PRIOR APPLICATION NUMBER: 60/085573
PRIOR FILING DATE: 1998-05-15
PRIOR APPLICATION NUMBER: 60/085704
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              Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Khono, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Yujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yonda, Y., Integrated awa, Y., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muzamatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. Sequencing pipeline with 384 multicapillary sequencer analysis (RISA) system-384 format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (16-UUL-2001) Yoshihide Hayashizaki, The Institute of Submitted (16-UUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN) Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (6SC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 330-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp, 7 Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Haracka, T., Hirozane, T., Hori, F., Hirozane, T., Hirozane, T., Koya, S., Kurihara, K., Kojima, Y., Kodo, S., Konno, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Noya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Mixata, M., Nakamura, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohsaro, N., Sano, H., Saato, R., Saitoh, H., Sakai, K., Sakazume, N., Sogabo, Y., Tagami, M., Tagawa, A., Shinagawa, A., Shiraki, T., Takeda, Y., Tanaka, T., Tomaru, A., Takahashi, F., Takaku, T., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Kahira, S., Miramatsu, M., and Hayashizaki, Y., Toya, T., Yasunishi, A.,
                                                                                                                                                                                                                                                                                                                                                                          The FANTOM Consortium and the RIKEN Genome Exploration Research Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs
Nature 420, 563-573 (2002)
6 (bases I to 2356)
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protein (InterPro|IPR002018, evidence: InterPro)"
                                                                                                                                                                                                                                                                              The RIKEN Genome Exploration Research Group Phase II Team and
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Nature 409, 685-690 (2001)
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Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
Location/Qualifiers
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Pred. No. 5.1e-241;
0; Mismatches 423;
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/strain="C57BL/6J"
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Best Local Similarity 75.9%;
Matches 1340; Conservative (
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45.4%; Query Match Best Local Similarity 99.9 Matches 901; Conservative 38 158 909 218 278 338 786 398 846 906 518 486 98 546 999 726 FEATURES ORIGIN g Dp õ g ò PP  $\delta$ g ò gg ò 엄 \$ B 8 8 8 ò 1372 1303 1423 1550 1610 1543 1670 1603 1730 1663 1790 1723 1184 AGATTCAGCTAAATCAGCGTATGATGAACCAAACCAACATCAACAAAATACTCTGGAGTT 1243 --GACAATGTCAATGAGCATGACTGGAAGATGCTACGAAACCGTATGATGACATAGTTC 1430 1431 AAGATGCCACTTTCGTGTATGCCACACTGCAGACTGCTCACTACCACCGAGATGCCGGCC 1490 04-MAR-2003 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 3431) Direct Submission Submitted (23-DEC-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590, ATGACGCTATCAGTAACCATGACTGGAAGATGTTCCGAAATCGCCTGATAGACCTAATCG GAGATGCCACCTTTGTCTACGCCACACTCCAAGCTGCGAGGTACCACCGAGATGCTGGCT TCCCTGTCTACCTGTATGAATTTGAGCACCACGCTCGTGGAATAATCGTCAAACCCCGCA GCCTTTCCATGGGTAAGGAAGGCACTTAGCCTCCAGATGATGAAATACTGGGCCAACT 1664 ATGAGAAGTACCTGCAGTTGGACTTCGATACAAGAGTGGGTGTGAAGCTCAAGGAGAAAA 1604 TTGCTCACACTGGGAACCCCAATGGCGAAAAGCTGCCCTACTGGCCACGCTTTGACAAGG AGTICCCGCTAAACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATGCTCTGGAGTA ccccccicharcrerácaacricaaccarccircricescarcarcarcarc CTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGCCCCTTCGCCACAG TTGCCCGCACAGGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCACGCTACAACAAGG ATGAAAAGTACCTGCAGCTGGATTTTTACCACAAGAGTGGGCATGAAGCTCAAGGAGAAGA AGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAGCAGAGGCAATTCT TGCCCTACCTTCTAGGTGTCAACAACCTGGAATTCAATTGGCTCTTGCCTTATATCATGA TGCCCTACCTCCTAGGTGTCAACGCAGAGTTCGAGTGGAACTTACCTTTTCTCATGA CCCGCACCCTGTTGAATATCACCAAGGAGCAGGTACCACTTGTGTGGTGGAGGAGTACCTG-Homo sapiens, Similar to cDNA sequence BC026374, clone INAGE:5267757, mRNA.
BC041823
BC041823 GI:27693665 GAGAGTGACCAAGCAAGAGGGAGCTA 1809 1851 AAGGGTGGCTATGCAGGAGGAGCCA 1876 Homo sapiens (human) Strausberg, R. Homo sapiens 1791 1124 1254 1314 1244 1373 1304 1364 1491 1424 1551 1484 1611 1544 1671 1731 1784 RESULT 2 BC041823 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL

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Toshiyuki and Piero Carninci (RIKEN)

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305

Neb site: http://www.shgc.stanford.edu
Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Blckson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
R. M. Clone distribution: MGC clone distribution information can be for through the I.M.A.G.E. Consortium/LiNL at: http://image.llnl.gov Series: IRAK Plate: 74 Row: d Column: 22 This clone has the following problem: retained intron. Location/Qualifiers /note="Vector: pBluescript" 1. 3431
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/clone="MAGE:5267757"
/fissue\_type="Testis"
/clone\_lib="WIH MGC\_97"
/lab\_host="DH10B"

1025 1085 ö 785 457 485 545 157 605 217 999 277 725 337 397 845 905 517 965 577 637 97 ACAAGTGGGTGCGCTTCAGCGAGGACTGTCTGTACCTGAACGTGTACGCGCCCGGCGCGCG CGCCCGGGGATCCCCAGCTGCCAGTGATGGTCTGGTTCCCGGGAGGCGCCTTCATCGTG GCGCTGCTTCTTCCTACGAGGCTCTGACTTGCCGCCCGCGAGAAGTGGTGCTGCTGT GGAACTGGGGGCTGCTGGACCAGATGGCGGCTCTGCGCTGCGGTGCAGGAACATCGCAG GGAACTGGGGCTGCTGGACCAGATGGCGGCTCTGCCTGGGTGGTGGAGGAACATCGCAG CCTTCGGGGGAGACCCAGGAAATGTGACCCTGTTCGGCCAGTCGGCGGGGGCCATGAGCA TCTCAGGACTGATGATGTCACCCCTAGCCTCGGGTCTCTTCCATCGGGCCATTTCCCAGA 458 TCTCAGGACTGATGATGATCACCCCTAGCCTCGGGACCTCTTCCATCGGCCCATTACCAGA GTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAACCCACTGAAAGTGGCCAAGAAGG GTGGCACCGCGTTATTCAGACTTTTCATCACTAGTAACCCACTGAAAGTGGCCCAAGAAGG TTGCCCACCTGGCTGGATGCAACCACAGCACACAGATCCTGGTAAACTGCCTGAGGG CACTATCAGGGACCAAGGTGATGCGTGTCCCAACAAGATGAGATTCCTCCAACTGAACT CACTATCAGGGACCAAGGTGATGCGTGTGTCCAACAAGATGAGATTCCTCCAACTGAACT GGTGCCTGCAGGAGTCCTGGGGCCAGCTGGCCTCGATGTACGTCAGCACGCGGGAACGGT ACAAGTGGCTGCGCTTCAGCGAGGACTGTCTGTACCTGAACGTGTACGCGCCGGCGCGCG CGCCCGGGGGATCCCCAGTGATGGTTCCCCGGGAGGCCCCTTCATCGTGG GGTGCCTGCAGGAGTCCTGGGGCCAGCTGGCCTCGATGTACGTCAGCACGCGGGAACGGT ; Score 900.4; DB 11; Length 3431; Pred. No. 2.9e-200; 0; Mismatches 1; Indels 0; 996 1026 638 g ò

Shiraki

NIH-MGC Project URL: http://mgc.nci.nih.gov Contact: MGC help desk Email: cgapbs-ramail.nih.gov Tissue Procurement: Miklos Palkovits, M.D., Ph.D. CDNA Library Preparation: Michael J. Brownstein (NHGRI)

us-10-001-227-1.rst

1086 TCCAGAGACCCGGAAGACATTATCTGGTCCATGAGCCCTGTGGTGGTGGTGTGGTGGTGGTGGTGGTGGTGGTG	1145 Db 1	GAAAACAGATGCATGTGGGGGAAGACCCCATCCAAGTCTTTTAGGAGTCCCTTCTCC 60 AGACCTCCTCAAGATTGCACCTCCAGAACCCCGGAGCCCTGGAAAGGA 397
1146 TCCCAGATGACCCTTTGGTGCTCCTGACCCAGGGGAAGGTTTCATCTGTGCCCTACCTTC	1205 Db 61 817 Qy 398	TICCTCTAGGTATCCTCAGGTTTGCACCTCCAGAACCCCCGGAGCCCTGGAAAGGA 120 AAATGCTACCACCTACCCGGCTGGGTGCCTGCAGGAGTCCTGGGGGCCAGCTGGCC 457
1206 TAGGTGTCAACAACCTGGAATTCAATTGGCTCTTGCCTTATATCATGAAGTTCCGGCTAA	1265 Db 121	
818 TAGGTGTCAACAACCTGGAATTCAATTGGCTCTTGCCTTATATCATGAAGTTCCGGCTA.	877 Qy 458	TCGATGTTAGGTCAGCAGGGGAACGGTACAAGTGGCTGCGGTTCAGGGAGGACTGTTG 517 TCGATGTTACGTCAGCACGCGGGAACGGTACAAGAGGGCTTCAGCGGAGGACTGTCTG 517 TCGATGTTACGTCAGCAACGGTACAAGAGGGCTGCGGTTCAGCGCAGAAGAGGAACGGTACAGAAGAGGCGGCAGTACAGAAGAGAAGAGGAACAAGAAGAGGAGAAGAAGAAGAA
878 ACCGGCAGGCGATGAGAAAGGAAACCATCACTAAGATGCTCTGGAGTACCGCGCACCCTGT	937 QY 518	Ω
13	Db 241 TACC	TACCTGAACGTGTACGCGCGCGCGCGCGCGCGGGGATCCCCAGCTGCCAGTGATGGTC 300
938 TG 939	Qy 578 TGGT. Db 301 TGGT.	TEGITCCCGGGAAGGGCCTTCATCGTGGGCGCTGCTTCTTCGTACGAGGCTCTGACTTG 637
RESULT 3 40053090 BQ053090 BQ053090 BQ053090 BQ053090 BCINITION AGENCOURT_6821751 NIH_MGC_106 Homo sapiens cDNA clone IMAGE:55	638 361	
5', mRNA sequence. ACCESSION BQ053090 VERSION BQ053090.1 GI:19812430 KEYWORDS EST.	Oy 698 CTGA(         Db 421 CTGA	CTGAGCACGACAGCCACGCGCGCGGGAACTGGGGGCTGCTGGACCAGATGGCGGCT 757 
	Oy 758	
REFERENCE 1 (Dasses 1 to 988) AUTHORS NIH-MGC http://mgc.nci.nih.gov/. TITLE National Institutes of Health, Mammalian Gene Collection (MGC) JOGRNAL Unpublished (1999)	818 818 541	
COMMENT Contact: Robert Strausberg, Ph.D. Email: Capaberemail.nih.gov Tissue Procurement: Dr. Daniel McVicar, DBS/NCI cDNA Library Preparation: Rubin Laboratory	QY 878 GGTC       001 GGTCC	GGTCTCTTCCATCGGGCCATTTCCCAGAGTGGCACCGCGTTATTCAGACTTTTCATCACT 937 
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL) DNA Sequencing by: Agencourt Bioscience Corporation Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at:	Qy 938 AGTAN  Db 661 AGTAN	agtaacccactgaaagtggccaagaaggttgcccacctggctgg
nttp: Plate High	Òy 998	acacagatcctggtaaactgcctgagggcactatcagggaccaa-ggtgatgcgtgtgtc 1056 
1 - 368	Qy 1057 ab 781	CAACAAGAIGAGAITICCICCAACIGAACITICCAGAGAGCACCCCGGAAGAGAITAICIGGIC 1116 
/clone="IMAGE:5934661" /tissue_type="natural killer cells, cell line" /lab_host="DH10B (phage-resistant)" /clone_lib="DH10B (phage-resistant)"	Qy 11117	CATGAGCCCTGTGGTGGANGGTGTGATCCCAGATGACCCTTTGGTGCTCC 1169
/note=_organ: Name of the property of the 1: Xhol; Sit EcoRI; cDNA, made by oligo-dT priming. Directionally o	QY 1170	
into booki/Anol sites using the following 5° adaptor GGCACGAG(G). Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of Califor Berkeley) using ZAP-CDNA synthesis kit (Stratagene) a	DD 901	,
Superscript II RT (Life Technologies). Note: this is NIH_MGC Library."	RESULT 4 BMS47028 LOCUS	8 1047 bp mRNA linear BST 20-FEB-2002
Query Match Best Local Similarity 97.2%; Pred. No. 6e-183; Matches 881; Conservative 0; Mismatches 16; Indels 9; Gaps	ACCESSION BM54703  4;  VERSION BM54703	
279 GAAAACAGATGCATGT-GGGGAAGACCCCATCCAAGTCTTTTAGGAGTCCCCTTCTCC	STA SOURCE HOMO ORGANISM HOMO	sapiens (human) sapiens

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/organism="Homo sapiens"
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Homo sapiens (human)
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1047)
NHI-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: Invitrogen
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
Plate: LiAM12728 row: d column: 14
High quality sequence stop: 647.
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/db_xref="taxon:9606"
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/lab_host="DH10B"
/lab_host="Organ: Pancreas; Vector: pBluescript SX(-); Site_1: Not1: Site_2: Xho1; cDNA made by oligo-dT priming.
Size-selected on agarose gel. Average insert size ~lkb. 5'
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Email: dmelton@blohp.harvard.edu
Email: dmelton@blohp.harvard.edu
Email: dmelton@blohp.harvard.edu
Email: dmelton@blohp.harvard.edu
Babington University Genome Sequencing Center For information on obtaining a clone please contact: Dr. Hiroshi Incue
(hinoue@lm.wustl.edu)
Fossible reversed clone: similarity on wrong strand
Seq primer: -40UP from Gibco
High quality sequence stop: 439.
Endocrine Pancress Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge,
MA 02138
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1 (bases 1 to 593)
Melton, D., Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K., Lemishka, I., Scearce, M., Brestelli, J., Gradwohl, G., Clifton, S., Hillier, L., Marra, M., Pape, D., Wylle, T., Martin, J., Blistain, A., Schmitt, A., Theising, B., Rither, E., Ronko, I., Bennett, J., Cardenas, M., Gibbons, M., McCann, R., Cole, R., Tsagareishvili, R., Williams, T., Jackson, Y. and Bowers, Y.
                                                                                                                                                                                                                                                                                                                       618 GCCCTGTGGTGGTGTGTGGTGATCCCAGATGACCCTTTGGTGCTCCCGACCCCAGGGA
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Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi Inoue
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AW512144 168 bp mRNA linear EST 03-MAR-2000 xu54ell.xl NCI_CGAP_Ut1 Homo sapiens cDNA clone IMAGE:2805548; 3'
Toshiyuki and Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
http://image.llnl.gov
Plate: LLAMI1675 row: g column: 22
High quality sequence stop: 525.
Location/Qualifiers
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Amplified once. Contact information: Hiroshi Inoue, MD, Metabolism Div. (Alan Permutt Lab), Washington University School of Medicine, Box 8127, 660 South Euclid Ave., St. Louis, MO 63110, E-mail: hinoue@imgate.wustl.edu, Tel: 314-362-1916, Fax: 314-747-2692.
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Contact: Robert Strausberg, Ph.D.

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Email: cgapbs-remail.nih.gov

Tissue Procurement: Miklos Palkovits, M.D., Ph.D.

CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (Mases 1 to 526) NIH-WGC http://mgc.nci.nih.gov/. NIH-WGC http://mgc.nci.nih.gov/. National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                              GGGATCCCCAGCTGCCAGTGATGGTCTGGTTCCCGGGAGGCGCCTTCATCGTGGGCGCTG
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                                                                                                                                         DB 13; Length 593;
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                                                                                                                                         Score 591.4; DB 13,
Pred. No. 4.9e-128;
0; Mismatches 1;
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Best Local Similarity 99.8%;
Matches 592; Conservative
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TITLE
JOURNAL
COMMENT
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/organism="Homo sapiens"

/mol_type="mRNA"

/mol_type="mRNA"

/don="IMAGE:5267757"

/lab_host="DH10B"

/clone lib="NIH MGC_97"

/note="Organ: testis, Vector: pBluescriptR (modified pBluescript KS+); Site! BamHi; Site 2: Sall-Xhoi (grcgag); Oligo-dT primed using primer

5.-TTTTTTTTTTTTTTTVN-3', size-selected for average insert size 2: Zk b and normalized to ROT 5. This is a primary library enriched for full-length clones and constructed using the Cap-trapper method (Carninci, in preparation). Library constructed by M. Brownstein (WMM/NHGRI, National Institutes of Health). Note: this is
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/tissue_type="adurway or parenchyma"
/dev_stage="adult"
/clone_lib="Rat lung airway and parenchyma cDNA libraries"
/note="Organ: lung, Vector: pGEW-112f(-); Site_1: Eco RI;
Site_2: Not I; mRNA was isolated from microdissected rat
lung_airways and parenchyma tissues."
                                                                                                                                                                                                                                CF111083 Shultzomica04334 Rat lung airway and parenchyma cDNA libraries Rattus norvegicus cDNA clone Contig3845 5', mRNA sequence.
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Contact: Shult2 MA
Dept. of Molecular Biosciences, School of Veterinary Medicine
Dept. of Molecular Brains Davis
1311 Haring Hall, One Shields Avenue, Davis, CA 95616, USA
1311 Haring Hall, One Shields Avenue, Davis, CA 95616, USA
1311 Haring Hall, One Shields Avenue, Davis, CA 95616, USA
Fax: 530 752 6698
Email: mashultz@ucdavis.edu
Average Phred score is 20 or better. All poor quality data (Phred 20) and vector/linker sequence has been removed.
High quality sequences stop: 1918.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       374 GAACCCCCGGGAGCCCTGGAAAGGAATCAGAGTGCTACCACCTACCGGCCTGGGTGCTG 433
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361 CGGGGAGACCCANGAAAIGIGACCTGTICGGCCAGTCGGCGGGGGCCATGAGCATCTCA 420
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Sattus norvegicus
Eukaryots, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314 GICTITIAGGAGICCCCTICTCCAGACCTCCTCTAGGTATCCTCAGGTTTGCACCTCCA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 1918)
Shultz,M.A., Zhang,L., Gu,Y.-Z., Baker,G.L., Fannuchi,M.V.,
Padua,A.M., Gurske,W.A., Morin,D., Penn,S.G., Jovanovich,S.B.,
Plopper,C.G. and Ckpitt, A.R.
Gene Expression Analysis in Response to Lung Toxicants: I.
Sequencing and Microarray Development
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.larity 55.7%; Pred. No. 5.1e-83;
Conservative 0; Mismatches 651; Indels 12;
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/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="Contig3845"
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                                                                                                                                                                                                                                                                                        Tumor Gene Index
Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/Libra at:
image.llnl.gov/image/html/iresources.shtml
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="NCI_CGAP_Ut1"
/clone_lib="NCI_CGAP_Ut1"
/note="Organ: uterus; Vector: pCWV-SPORT6; Site_1: SalI;
Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.75 kb. Life Technologies catalog #:
11538-014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 550
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
       similar to SW:ES10_RAT P16303 LIVER CARBOXYLESTERASE 10 PRECURSOR;, mRNA sequence.
                                                                                                                                                                       Craniata, Vertebrata, Euteleostomi,
Catarrhini, Hominidae, Homo.
                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
(Dases 1 to 468)
NCI-CGAP http://www.ncbi.nlm.nih.gov/nciogap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
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Pred. No. 7.9e-91;
0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .468
/organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="IMAGE:2805548"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.8%; S
milarity 97.5%; P
Conservative 0;
                                                                                   AW512144.1 GI:7150222
                                                                                                                                Homo sapiens (human)
Homo sapiens
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Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Taqawa, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Tayahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Direct Sibmisaion

Direct Sibmisaion

Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research (Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute, 17-22 Subhiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-922, Fax:81-45-503-922, Fax:81-45-503-922, Conter and Sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research froup in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
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GESAGGFSVSVLVLSPLAKNLPHRAISESGVSLTAALITTDVKPIAGLVATLSGCKTT
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/clone lib="RIKEN full-length enriched mouse cDNA library"
/dev_sTage="adult"
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Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
Location/Qualifiers
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Email: genome-resgsc.riken.go.jp,

URL:http://genome.gsc.riken.go.jp/
Carninoi.p., Shibata.Y., Hayatsu.N., Sugahara,Y., Shibata,Y.,

Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.

Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1677-1630 (2000)

wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,

watshiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T.,

Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A.

and Hayashizaki,Y.

RIKEN integrated sequence analysis (RISA) system-384-format
sequencing pipeline with 384 multicapillary sequencer. Genome Res.

10 (11), 1757-1771 (2000)

Konno,H., Fukunishi,Y., Shibata,K., Itoh,M., Carninci,P.,
Sugahara,Y. and Hayashizaki,Y.
Computer-based methods for the mouse full-length cDNA
encyclopedia: real-time sequence clustering for construction of a
nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001)

Kondo,S., Shinagawa,A., Saito,T., Kiyoswa,H., Yamanaka,I.,

**Aizawa,K., Fukuda,S., Hara,A., Itoh,M., Kawai,J., Shibata,K. and
***Aizawa,K., Fukuda,S., Hara,A., Itoh,M., Kawai,J., Shibata,K. and
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Arakawa, T., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hiramoto, K., Hori, F., Ishii, Y., Ito, M., Kawai, J., Konda, M., Koya, S., Matsuyama, T., Miyazaki, A., Nomura, K., Ohno, M., Okazaki, Y., Okido, T., Saito, K., Sakai, C., Sakai, K., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Takahashi, F., Takeda, Y., Tanaka, T., Toya, T., Muramatsu, M. and Hayashizaki, Y. RIKEN Mouse ESTS (Arakawa, T., et al. 2001)

L Unpublished (2001)
GAGAAGGCACTTAGCCTCCAGATGATAATACTGGGCCAACTTTGCCCGCACAGGAAAC 1687
                                                                                                                                  1522 GAGACCAACCTCAGCAAGATGGTGAAGTTCTGGGCCAACTTTGCTCGGAATGGGAAC 1581
                                                                                                                                                                                        CCCAATGATGGGAATCTGCCCTGCTGGCCACGCTACAAGAAGATGAAAGTACCTGCAG 1747
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musculus cDNA clone A030007M20 5', mRNA sequence.
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The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan Tel: 81-45-503-9216
Fax: 81-45-503-9216
                                                                                                                                                                                                                                                                                                                                         1642 ATTGGTGCCTCAACTCAGGCAGCCCAGAGGCTGAAGGACAAAGAAGTGAGTTTTTGG 1698
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Please visit our web site (http://genome.gsc.riken.go.jp) for
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contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5' GAGAGAGAGAAGGATCCAAGAGCTCTTTTTTTTTTTTTVN 3'], cDNA was
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/dev_stage="6 days neonate"
/lab_host="DH10B"
                                          /mol_type="mRNA"
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/clone="A030007M20"
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CF116765 478 bp mRNA linear EST 23-JUL-2003 ad555.zl ad adult sheep skin library Ovis aries cDNA, mRNA sequence.
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17.5%; Score 346.6; DB 14; Length 478;
Best Local Similarity 84.1%; Pred. No. 1.7e-70;
Matches 391; Conservative 0; Mismatches 74; Indels 0;
                                                                                                                                                                                                                      1218 ACCIGGAATICAATIGGCTCTIGCCTTATATCATGAAGT 1256
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/sex="male"
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Fax: 9798456970
Email: david.adelson@tamu.edu.
Location/Qualifiers
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/strain="Merino"
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                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryogia, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

I bases I to 403

Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S., Rucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin,J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B., Wahlte,Y., Wylie,T., Waterston,R. and Wilson,R.
                                                                                        AM43U272

ZX42N02.rl Soares total fetus Nb2HFB 9w Homo sapiens cDNA clone
IMAGE:789171 5' sImilar to TR:G1931 G1931 CARBOXYLESTERASE
PRECURSOR ;, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL ; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
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Organism="Homo sapiens"

(m) Lype="mRNA"

(db xref="GDB:5986788"

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97.7%;
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ACCESSION VERSION KEYWORDS SOURCE ORGANISM

TITLE JOURNAL COMMENT

REFERENCE AUTHORS

LOCUS DEFINITION

RESULT 13 BX488287

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//db_xref="texaon:9606"
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/lab.host="bh10B"
/clone lib="MOI CAP Kid12"
/clone lib="MOI CAP Kid12"
/note="Organ: kIdney; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site li Not I; Site 2: Eco RI, Plasmid DNA from the normalized library NoT CAP Kid5 was prepared, and ss circles were made in vitro. Following HAP purlifaction, this DNA was used as tracer in a subtractive hybridization, this DNA was used as tracer in a subtractive hybridization, caption. The driver was PCR-amplified cDNAs from a pool of 5,000 clones made from the same library (cloneIDs 1323912-1325831, 1471368-1472903 and 149104-1493255). Subtraction by Bento Soares and M. Fatima Bonaldo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: cgapbs-remail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert Buck, M.D., Ph.D.
CDNA Library Preparation: M. Bento Soares, Ph.D.
CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: Washington University Genome Sequencing Center
found through the I.M.A.G.E. Consortium/LLNL at:
www.bio.linl.gov/bbrp/image/image.html
Insert Length: 498 Std Error: 0.00
Seq primer: -400P from Gibco
High quality sequence stop: 330.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340 TTCTGCAGCACAGGCTCGGCATCTTCGGCTTCCTGAGCACGGACGACGACGCCACGGCGCGCG 399
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NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP), Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Index Unmor Gene Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Undex Unde
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442 bp mRNA linear EST 04-SEP-2003

DKFZp686E07269_r1 686 (synonym: hlcc3) Homo sapiens cDNA clone

DKFZp686E07269_5', mRNA sequence.
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Bloecker, H., Boecher, M., Mewes, H.W., Weil, B., Amid, C., Osanger, A., Fobo, G., Han, M. and Wiemann, S.
EST (Bloecker, H., Boecher, M., Mewes, H.W., Weil, B., Amid, C., et al.) Unpublished (2003)
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This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Gerome Analysis, German Cancer
Research Center (DRZ); Email s.wiemannGekfz- heidelberg.de;
sequenced by GBF (National Research Centre for Biotechnology Ltd.,
Braunschweig/Germany) within the cDNA sequencing consortium of the
German Genome Project.
No sl. sequence available.
This clone (DKRZp686E07266) is available at the RZPD in Berlin.
Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de.
Location/Qualifiers
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Site_1: SfiIA; Site_2: SfiIB;
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Similarity 100.0%; Pred. No. 1.1e-69;
13; Conservative 0; Mismatches 0;
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/note="Vector: pTriplEx2;
cDNA-collection"
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/mol_type="mRNA"
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BX488287.1 GI:31953725
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1837 GCAGAGGCAATTCTAAGGGTGGCTATGCAGGAAGGAGCCAAAGAGAGGGGTTTGCCCCCACC 1896
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1477 CCGAGATGCCGGCCTCCCTGTCTACCTGTATGAATTTGAGCACCACGCTCGTGGAATAAT
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                        109 CCGAGATGCCGGCCTCCCTGTTACCTGTATGAATTTGAGGACCACCACGTCGTGGAATAAT
                                                                                       CGTCAAACCCCGCACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGG
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// Organism=Homo sapiens"
// Organism=Homo sapiens"
// Ab_xref="taxAn" 9606"
// Clone="CSODIG33YE23"
// Lissue type="PLACENTA COT 25-NORMALIZED"
// Clone="Ib="Homo sapiens PLACENTA COT 25-NORMALIZED"
// Once="Ist strand CDNA was primed with a Not1-ollago (TT)
// Once="Ist strand CDNA was primed with a Not1-ollago (TT)
// Driest Five prime end enriched, double-strand CDNA was
digested with Not I and cloned into the Not I and ECOR V
sites of the pCMVSPORT 6 vector. Library was normalized."
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1. (bases 1 to 884)
11, W.B., Gruber, Gruber, J., and Polayes, D.
Full-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                   374 ACAGGAGCTGGAGCATGAGGTGGATTCTGTGCTGGAGCCTCACCCTTTGCCTGATG
                                                                                                                                                         434 ACGGCTACCATGCCATCCACAGTGTTGCCATCCACAGTGTTGCCATCACTCCTGCCCACA
                                                                                                                                                                                                        149 GCAGGAGCTGGCTGGAGCATGAGGTGGATTCTGTGCTGGAGCCTCACCCTCTGCCTGATG
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                                                                                                             ACGGCTACCATGCCATCCACAGTGTTGCCATCCACAGTGTTGCCATCACTCCTGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Genoscope
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Library was constructed by Life Technologies, a division of
Invitrogen. This sequence belongs to sequence cluster 8153.f,
Contact : Feng Liang Email : fliang@lifetech.com URL :
http://fulllengtl.invitrogen.com/ Invitroden Corporation 1600
Faraday Avenue Genoscope sequence ID : CSODI033AC12QP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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                   Score 331.6; DB 9;
Pred. No. 5.4e-67;
0; Mismatches 4;
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ilarity 98.8%;
Conservative
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AUTHORS
TITLE
JOURNAL
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GenCore version 5.1.6

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OM protein - protein search, using sw model

Run on:
August 3, 2004, 22:23:05; Search time 57 Seconds
(without alignments)
2894.873 Million cell updates/sec

Title:
Berfect score: 3112
Sequence:
1 MPSTVLPSTVLPSLLPTAGA.......KWAFWMSLYQSQRPEKQRQF 584
Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5
Searched: 1586107 seqs, 282547505 residues
Total number of hits satisfying chosen parameters: 1586107
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ase: A\_Geneseq\_29Jan04:\*
1: geneseqp1980s:\*
2: geneseqp2090s:\*
3: geneseqp2001s:\*
5: geneseqp2003s:\*
6: geneseqp2003s:\*
7: geneseqp2003s:\*
8: geneseqp2004s:\*
Pred. No. is the number of results predicted by chance to hav

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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Novel	Abu89380 Human PRO	Abu86221 Human sec	Human	Abu80462 Human PRO	0 Human	Human	5293 Human	3 Human	Human		Abu84991 Novel hum	Novel	Human	Human	Abu88681 Novel hum	Human	Abo06177 Novel hum	Human	Abo09275 Human sec
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ABU72231	ABU89380	ABU86221	ABU67434	ABU80462	ABR99380	ABR98770	ABO16293	ത	ABO18834	ABR78255	ABU84991	ABO00130	ABO11462	ABO02107	ABU88681	ABU83376	AB006177	ABR59213	AB009275
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RESULT 1

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

Minimum DB seq length: 0 Maximum DB seq length: 200000000

ABB7		4 4 5 0 U
X F	ABB/9484 Standa	
AC .	ABB79484;	
E X	23-SEP-2002 (f	(first entry)
DE X	Human carboxylesterase-2	sterase-2 (COE-2).
<b>X</b>	Carboxylesteras	Carboxylesterase-2; COE-2; human; antiinflammatory; virucide; antiulcer;
X & X	antipsoriatic;	antingumatic, antitumour; cytostatic; enzyme; gene therapy
SS	Homo sapiens.	
<b>E</b>	Key	Location/Qualifiers
F.	Domain	
<u>.</u> F	Domain	/note= "Carboxylesterase domain" 2645
H		/note= "Transmembrane domain"
ГJ	Domain	
F1 F1		<pre>/note= "type-B similar family carboxylesterase/ lipase domain"</pre>
H.	Domain	
드	1	/note= "carboxylesterase precursor domain"
- E	red ton	13/**/ /note= "Carboxylesterase type B2 signature motif"
FT	Domain	1
F		/note= "hydrolase lipase hormone-sensitive lipid
Η		degradation domain"
E E	Region	231246
- E	Domain	באלה בד פילומנתים
ъŢ		/note= "Transmembrane domain"
FT	Domain	801
담		/note= "type-B similar family carboxylesterase/ lipase
E	Dom:	domain" osa 340
ı E	מווסם דדו	/note= "Carboxylesterase family multigene reticulum
E E		use signal domain"
FI	Dollarii	ycoprotein serine carboxyleste
FT	-	acetylcholinesterase cocaine B-esterase domain"
1 5	Domain	350542 /note- "Esterase hydrolase n-nitrobenzy] polvurethane
- E		Ē
FT	Domain	. 364, .577

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The present sequence is the protein sequence of human carboxylesterase-2 (COE-2), a novel carboxylesterase family member. COE-2 participates in the metabolism of various lipid and fatty acid compounds which are the metabolism of various lipid and fatty acid compounds which are the metabolism of various lipid and fatty acid compounds which are involved in pain and/or inflamation signalling. It is highly expressed in tissues which contain a ferent neurons, particularly brain and spinal cord tissue. Homology searches against different databases identified a number of characteristic domains and motifs in the COE-2 amino acid sequence. The invention provides COE-2 nucleic acid molecules, antisense nucleic acid molecules, recombinant expression vectors, host cells, can inflammatory or pain disorder. Compounds capable of treating an inflammatory or pain disorder. Compounds capable of treating an inflammatory or pain disorder. Compounds capable of treating an inflammatory or pain disorder are identified from their ability to modulate COE-2 nucleic acid expression or COE-2 polypeptide activity.

Modulator compounds are used in a claimed method of treating an inflammatory or pain disorder. Carboxyleterase-associated pain disorders include hyperalgesia, pain associated with musculoskeletal disorders include hyperalgesia, pain associated with misorylesterse associated inflammatory disease, inflammatory asthma, aparceatitis, sometoform disorders and setme, archma, aparceditis, soptic shock, nebricial inflammatory disease, inflammatory or storial inflammatory disease, inflammatory broad archmaic aberrain blood pressure, chronic bronchitis, sarcoidosis, scleroderma, lupus, polymyositis, amyloidosis, chronic bronchitis, sarcoidosis, scleroderma, lupus, polymyositis, misregulation of berrain blood clotting, misregulation of sarcoidosis, corders indiporation of labour, and misregulation of serious respondances of processure, detection assays (e.g., chromosomal mapping) tissue reproductive medicitive medicinia essays, processure,
                                                          note= "carboxylesterase signal serine liver glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel isolated human carboxylesterase-2 family member polypeptide, 18903, useful for treating inflammatory disorders, pain disorders, tumor and
                                                                                                                                                                                                                        36. .580
note= "carboxylesterase hydrolase precursor domain"
  note= "esterase carboxylase serine alpha esterase
                                                                                                 95. .554
hote= "acetylcholinesterase domain"
15. .573
                                                                                                                                                                                                       note= "esterase hydrolase domain"
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                                                                                                                                                             /note= "esterase domain<sup>:</sup>
487. .569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 12; Page 122-123; 129pp; English,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                  30-NOV-2001; 2001WO-US045356
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     Score 3112; DB 5;
Pred. No. 1.9e-286;
Mismatches 0;
100.0%; Sco
100.0%; Pre
                                       584; Conservative
                        Similarity
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AAE21052 RESULT

AAE21052 standard; protein; 584 AA

(first entry) 01-JUL-2002 Human drug metabolising enzyme (DME-10) protein.

Human, drug metabolising enzyme; cell proliferative disorder; metabolic; autoimmune; inflammatory; developmental; gastrointestinal; hypergonadal; pancreatic; endocrine; eye; dermatitis; Addison's disease; antilipaemic; acquired immunodeficiency syndrome; AlDS; glomerulonephritis; anorectic; diabetes; atherosclerosis; adult respiratory distress syndrome; anaemia; grave's disease; thyroiditis; Crohn's disease; infection; anticoagulant; systemic lupus erythematosus; cirrhosis; psoriasis; epilepsy; gastritis; cataract; hypoplutians; cancer; rheumatoid arthritis; conjunctivitis; cystic fibrosis; peptic ulcer; Milson's disease; hepatitis; antithyroid; allergy; diarrhoea; thrombosis; obesity; immunostimulant; tranquillizer; infertility; vulnerary; anticonvulsant; gynaecological; laxative; goltre; nootropic; jaundice; trauma; asthma; DME-10; enzyme. 

Homo sapiens

Location/Qualifiers

1. .43 /label= Signal\_peptide

Peptide

Sequence 584 AA;

FGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNS TQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQ 301 TQILVNCLRALSGTKVMRVSNKMRFLQLNPQRDPEBEIIWSMSPVVDGVVIPDDBLVLLTQ

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FGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNS

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1 MPSTVLPSTLPTAGAGWSMRMILCWSLTLCLMAQTALGALHTKRPQVVTKYGTLQ

GKQMHVGKTPIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQESWGQLA

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SMYVSTRERYKWLRFSEDCLYLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDL 121 SMYVSTRERYKWLRFSEDCLYLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDL 181 AAREKVVLVFLQHRLGIFGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTL

GKOMHVGKTPIOVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQESWGQLA

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300

420

GKVSSVPYLLGVNNLEFNWLLPYIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLV

361

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361 421

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480

VKPRIDGADHGDEMYFLFGGPFAIGLSMGKEKALSLQMMKYWANFARIGNPNDGNLPCWP 540 481 VKPRIDGADHGDEMYFLFGGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWP 540

RYNKDEKYLQLDFTTRVGMKLKEKKMAFWMSLYQSQRPEKQRQF

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181

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ABG10635 standard; protein; 509

ABG10635;

VEEYLDNVNEHDWKMLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGII

420

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The invention relates to an isolated human drug metabolising enzyme (DME)

polypeptide or a biologically active or immunogenic fragment of DME. DME

care diagnosis, treatment and prevention of cell proliferative,

autoimmune/inflammatory, developmental, endocrine, eye, metabolic and

catching disorders including live disorders. Autoimmune/

conflammatory disorders including live disorders. Autoimmune/

conflammatory disorders including live disorders. Autoimmune/

conflammatory disorders including live disorders. Autoimmune/

conflicts, orchn's disease, atopic dermatitis, diabetes mellitus,

conflicts, orchn's disease, atopic dermatitis, diabetes mellitus,

conflicts, orchn's disease, atopic dermatitis, diabetes mellitus,

conflicts, uveitis, viral, bacterial, protozoal, parasitic,

fungal, helminnic infections and trauma. Cell proliferative disorders

conflude cancer, arteriosclerosis, cirrhosis and psoriasis; developmental

disorders of hypothatmans/pituitary disorders associated with

chypopituitarism, including diabetes insipidus, hypogonadism, disorders

conforders associated with gonadal steroid hormones such as

conforders of the eye include conjunctivitis and gracecomastia.

Conforders of the eye include conjunctivitis and macular degeneration and

metabolic disorders associated with gonadal steroid hormones such as

conformentiosis, infertility, hypergonadal disorders and gynaecomastia.

Conformentiosis, include diabetes, cystic fibrosis, obesity and

metabolic disorders include diabetes, cystic fibrosis, obesity and

metabolic disorders include diabetes, cystic fibrosis, obesity and

metabolic disorders include diabetes, cystic fibrosis, obesity and

culcer, hepatitis, constipation, diarrhoea, jaundice, Wilson's disease,

thrombosis and hepatic tumours. DME gene is useful in gene therapy. The

constipation diarrhoea, and pubman DME-10 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Baughn MR, Bruns CM, Das D, Delegeane AM, Ding L, Elliot VS; Gandhi AR, Griffin JA, Hafalia AJA, Khan FA, Lal P, Lee S, Lu DAM, Lu Y, Patterson C, Ramkumar J, Ring HS, Sanjanwala MS, Tang YT; Thangavelu K, Thornon M, Tribouley CM, Walia NK, Warren BA, Yang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New human drug metabolizing enzyme polypeptide and polynucleotide useful for diagnosing, treating and preventing cell proliferative, autoimmune/inflammatory, endocrine, eye, metabolic and gastrointestinal
44. .584
/note= "Mature human DME-10 protein"
137. .147
137. .247
231. .246
/note= "Carboxylesterase B1 motif"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 54; Page 154-156; 179pp; English
                                                                                                                                                                                                                                                                                                                                              2000US-0228067P.
2000US-0230063P.
2000US-023244P.
2000US-0234269P.
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2000US-0224728P.
2000US-0226440P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                (INCY-) INCYTE GENOMICS INC.
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N-PSDB; AAD33489.
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Thangavelu K, T
Yao MG, Yue H;
                                                                                                                                                       WO200212467-A2
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18-AUG-2000; 2
24-AUG-2000; 3
31-AUG-2000; 2
20-SEP-2000; 2
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                                                Domain
                                                                                        Domain
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RESULT 3
ABG10635
               Query Match 100.0%; Score 3112; DB 5; Length 584; Best Local Similarity 100.0%; Pred. No. 1.9e-286; Matches 584; Conservative 0; Mismatches 0; Indels 0.
                                                                                                                                       Sequence 584 AA;
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New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations
                                                                                               Human, chromosome mapping, gene mapping, gene therapy, forensic;
food supplement, medical imaging, diagnostic; genetic disorder.
                                               Novel human diagnostic protein #10626.
                                                                                                                                                                                                                                                                                                                                                                                               31-MAR-2000; 2000US-00540217.
23-AUG-2000; 2000US-00649167.
                                                                                                                                                                                                                                                                                                                                               30-MAR-2001; 2001WO-US008631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tang
(first entry)
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N-PSDB; AAS74822.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                    WO200175067-A2.
                                                                                                                                                                                    Homo sapiens.
13-FEB-2002
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20-MAR-1998,
20-MAR-1998,
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                AAY41723;
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09-APR-19
09-APR-19
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15-APR-19
                                                                                                                                                      Homo
  The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chomosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal cativity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in issue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biddiversity and to produce other types of data and products dependent on DNA and anno acid sequences. ABG00010-ABG30377 represent novel human diagnostic parent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at the electronic format directly from WIPO at the printed specification, but was obtained in electronic format directly from WIPO at
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KVAKKVAHLAGCNHNSTQILVNCLRALIRAKVMRVSNKMRFLQINFQRDPEEIIWSMSPV 242
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENIAAFGGDPGNV-TLFGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRLFITSNPL 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243 VDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIMKFPLNRQAMRKETITKMLW 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----NITKEQVPLVVEEYLDNVNEHDWKMLR 437
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGIIVKPRTDGADHGDEMYFL
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responsible for genetic disorders or other traits and to assess biodiversity.
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                                                                                                                                                                                                                                                                                                                                                                                                  76.8%; Score 2391.5; DB 90.9%; Pred. No. 5e-218; iive 2; Mismatches 1
                                        Claim 20; SEQ ID NO 40994; 103pp; English.
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Best Local Similarity 90.9
Matches 461; Conservative
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Human, PRO; EST; expressed sequence tag; PCR primer; hybridisation; probe; blood coagulation disorder; cancer; cellular adhesion disorder; secreted protein; transmembrane protein.
                          Human PRO873 protein seguence.
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98US-0078010P-
98US-0078910P-
98US-0079594P-
98US-0079594P-
98US-0079594P-
98US-0079584P-
98US-0079683P-
98US-0079683P-
98US-0079683P-
98US-0079683P-
98US-0079788P-
98US-0080107P-
98US-0080194P-
98US-0080134P-
98US-0080134P-
98US-0080134P-
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98US-0081185P-
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98US-0082767P.
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(first entry)
                                                                                                        sapiens
                                                                                                                                  WO9946281-A2
                                                                                                                                                                                                                                                                               13-MAR-1998;
17-MAR-1998;
20-MAR-1998;
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01-APR-1998;
01-APR-1998;
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07-DEC-1999
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29-APR-1998; 29-APR-1998;

AAY41723 standard; protein; 545 AA

AAY41723 ID AAY4

464

226 205

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PRO polypeptide; mammal; tumour; cancer; human; cattle; horse; sheep; dog; cat; pig; goat; rabbit; tumour necrosis factor alpha; TNF-alpha; blood; chondrocyte cell; cell proliferation; cell differentiation; colon; adrenal; lung; breast; prostate; rectum; cervix; liver; genetic disorder.
                                                                                                                                                                                                LOLNFORDPEBIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385
                                                                                                                                                                                                                                                        386 KFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEBYLDNVNEHDWKMLRNRMMDIVQ
                   APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
                                                                                    APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
                                                                                                                    SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR
                                                                                                                                                                            266 AISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRF
CLOESWGOLASMYVSTRERYKWLRFSEDCLYLNVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human PRO polypeptide sequence #29.
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03-MAR-2000, 2000MC-0187202P.
04-MAR-2000, 2000US-0186968P.
14-MAR-2000, 2000US-0189320P.
14-MAR-2000, 2000US-0189320P.
15-MAR-2000, 2000US-0190828P.
21-MAR-2000, 2000US-0190828P.
21-MAR-2000, 2000US-0191048P.
21-MAR-2000, 2000US-0191048P.
21-MAR-2000, 2000US-0191348P.
29-MAR-2000, 2000US-0191348P.
29-MAR-2000, 2000US-0191348P.
29-MAR-2000, 2000US-0193653P.
30-MAR-2000, 2000US-0193653P.
30-MAR-2000, 2000US-0193659P.
11-APR-2000, 2000US-0194449P.
11-APR-2000, 2000US-019600P.
11-APR-2000, 2000US-019600P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yuan J,
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      98US-0083558P.
98US-0083559P.
98US-0084414P.
98US-0084414P.
98US-0084414P.
98US-008463P.
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98US-008463P.
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98US-008463P.
98US-008533P.
98US-008533P.
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98US-0085414P.
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80.3%;
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N-PSDB; AAZ34105.
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      29-APR-1998;
29-APR-1998;
05-MAY-1998;
06-MAY-1998;
06-MAY-1998;
07-MAY-1998;
07-MAY-1998;
07-MAY-1998;
07-MAY-1998;
07-MAY-1998;
07-MAY-1998;
13-MAY-1998;
13-MAY-1998;
13-MAY-1998;
15-MAY-1998;
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15-MAY-1998;
18-MAY-1998;
22-MAY-1998;
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22-MAY-1998
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SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR 346
                                                     AISQSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRF 325
                                                                                                                   LOLNFORDPERIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385
                                                                                                                                                                            KFPLNRQAMRKETITKWLWSTRTLLNITKEQVPLVVBEYLDNVNEHDWKWLRNRMMDIVQ 445
                                                                                                                                                                                                  ------NITKEQVPLVVEEXLDNVNEHDWKMLRNRMMDIVO 499
                                                                                                                                              LOLNFORDPEELIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPY-- 464
                                                                         Human, PRO, cytostatic; tumour; cancer; breast; lung; stomach; liver;
dog; cat; cow; horse; sheep; pig; goat; rabbit; ADEPT;
antibody-dependent enzyme mediated prodrug therapy.
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98US-0080327P.
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31-OCT-1997
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13-NOV-1997
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                                                                                                                                                                                                                                                                                                                                                                                                                           Novel nucleic acids encoding PRO polypeptides, used to diagnose the presence of tumors, such as prostate and breast tumors, in mammals and to screen for modulators of the compounds.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146 APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
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           18 APR-2000; 20000S-0199121P.
18 APR-2000; 20000S-0199397P.
25 APR-2000; 20000S-0199597P.
25 APR-2000; 20000S-0199550P.
25 APR-2000; 20000S-0199550P.
27 AAY-2000; 20000S-0199550P.
17 AAY-2000; 20000S-0199541.
17 AAY-2000; 2000WO-US014042.
20 AAY-2000; 2000WO-US014941.
02 -JUN-2000; 2000WO-US014941.
05 -JUN-2000; 2000WO-US019932P.
26 -JUN-2000; 2000WO-US029832P.
27 -JUG-2000; 2000WO-US029832P.
28 -JUN-2000; 2000WO-US029832P.
28 -JUN-2000; 2000WO-US029832P.
28 -JUN-2000; 2000WO-US029832P.
28 -JUN-2000; 2000WO-US029832P.
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01-DEC-2000; 2000WO-US032678.
20-DEC-2000; 2000WO-US034956.
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N-PSDB; AAS45953.
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97US - 0063131P.
97US - 0063131P.
97US - 0066120P.
 24-0CT-1997;
24-0CT-1997;
28-0CT-1997;
28-0CT-1997;
28-0CT-1997;
31-0CT-1997;
31-0CT-1997;
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                                                                                                      Gaps
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                                                                       Length 545,
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80.3%; Pred. No. 2.8e-183;
ive 5; Mismatches 26;
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Matches 399; Conservative
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18-SEP-1997;
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  and transmembrane protein, PRO, TNP-alpha, factor alpha, chondrocyte cell; tumour; gene therapy;
                                 Human secreted/transmembrane protein (PRO) #29.
                                                                                                                              970S-0059263P.
970S-0053266P.
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98US-0085582P.
98US-0085700P.
                                                                                                                   2002US-00176756
                    (first entry)
                                              Human, secreted a tumour necrosis fitissue typing.
                                                                                        US2003032112-A1.
                                                                          Homo sapiens.
                    02-AUG-2003
                                                                                                                   21-JUN-2002;
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-DEC-1997;
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31-OCT-1997
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       ABU84291;
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LOLNFORDPERIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385
                                                                                                                                                                    -----NITKEQVPLVVEEYLDNVNEHDWRMLRNRWMDIVQ 499
                                                                        406
                                                                                                                Human, PRO; secreted protein, transmembrane protein, extracellular domain, tumour necrosis factor-alpha, TNF-alpha, chondrocyte; proliferation, differentiation, cartilage disorder, bone disorder, arthritis, sports injury, cancer, tumour, diagnosis, adrenal tumour, lung, colon, breast, prostate, kidney, rectum, cervix, liver, drug screening, transgenic animal, genetic analysis;
                                                                                                                                                KFPLNRQAMRKETI TKMLWSTRTLLNI TKEQVPLVVEEYLDNVNEHDWKKLRNRMMDI VQ
                                                                  SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR
                     287 SHARGNWGLLDQWAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR
                                               AISQSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKWRF
                                                                                                                                                                                                                                                                                                                                                                Human secreted polypeptide PRO873, SEQ ID NO:58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antiarthrific; vulnerary; gene therapy
                                                                                                                                                                                                                                                                                          ABR66165 standard; protein; 545 AA
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                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human secreted polypeptide PRO873, SEQ ID NO:58.
                                                                                                          65.1%; Score 2026.5; DB (80.3%; Pred. No. 2.8e-183; iive 5; Mismatches 26;
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                                                                                                             Query Match
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15-MAY-1998; 15-MAY-1998; 22-MAY-1998; 22-MAY-1998; 22-MAY-1998; 22-MAY-1998; 22-MAY-1998; 23-MAY-1998; 23-MA
   Human; secreted and transmembrane protein; PRO; TNF-alpha;
tumour necrosis factor alpha; chondrocyte cell; tumour; gene therapy;
tissue typing.
                                                                                                            Human secreted/transmembrane protein (PRO) #29
                     ABU99495 standard; protein; 545 AA
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266 AISOSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRF 325
347 AISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRF 406
                                                          287 SHARGNWGLLDQWAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR 346
                                                                                                                                           LQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385
                                                                                                                                                           386 KFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEBYLDNVNEHDWKMLRNRMMDIVQ 445
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                                           SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR
                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; PRO polypeptide; secreted and transmembrane protein; tumour; chromosome mapping; gene mapping; cytostatic.
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97US-00708970P.
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28-0CT-1997;
28-0CT-1997;
28-0CT-1997;
29-0CT-1997;
31-0CT-1997;
13-NOV-1997;
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80.3%; Pred. No. 2.8e-183;
live 5; Mismatches 26; Indels
98US-0096891P.
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Best Local Similarity
Matches 399; Conservat
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29-SEP-1998;
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30-SEP-1998;
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PR 01-ARR-1998, 98US-0080124P.

PR 00-ARR-1998, 98US-0080134P.

PR 00-ARR-1998, 98US-0080134P.

PR 12-ARR-1998, 98US-00810349P.

PR 22-ARR-1998, 98US-0081569P.

PR 22-ARR-1998, 98US-0081465P.

PR 07-WAY-1998, 98US-0081456P.

PR 07-WAY-1998, 98US-0081456P.

PR 07-WAY-1998, 98US-0081456P.

PR 11-MAY-1998, 98US-0081456P.

PR 12-WAY-1998, 98US-0081456P.

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PR 12-WAY-1998, 98US-008128P.

PR 10-WAY-1998, 98US-008128P.

PR 11-WAY-1998, 98US-008158P.

PR 11-WAY-
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98US-010173P.

25-JUN-1998, 25-JUN-1998, 25-JUN-1998, 25-JUN-1998, 25-JUN-1998, 26-JUN-1998, 36-JUN-1998, 36-JU

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970S-00651486P

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13-NOV-1997;
21-NOV-1997;
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27-MAR-1998;
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                                                                                                                                                                APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFIQHRIGIFGFLSTDD
                                                                                                                                                                                                                                                                                 SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMASPLASGLFHR
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                                                                            Length 545;
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                                                                            Score 2026.5; DB 6;
Pred. No. 2.8e-183;
5; Mismatches 26;
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 98US-0102687P.
98US-0102657P.
98US-0102365P.
98US-010328P.
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98US-00168978.
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97US-0059266P.
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Best Local Similarity 80.3
Matches 399; Conservative
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98US-0100664P.
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65 Gaps 67; Length Query Match
Best Local Similarity 80.3%; Pred. No. 2.8e-183;
Matches 399; Conservative 5; Mismatches 26; Indels 9

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346 286 265 227 206 287 엄 상 엄 \$ B \$

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98US-0091628P.
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 06-MAY-1998;
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22-MAY-1998;
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                                                                                                                        Human; PRO; secreted protein; transmembrane protein; extracellular domain; tumour necrosis factor-alpha; TNP-alpha; chondrocyte; proliferation; differentiation; cartilage disorder; bone disorder; arthritis; sports injury; cancer; tumour; diagnosis; adrenal tumour; lung; colon; breast; prostate; kidney; rectum; cervix; liver; drug screening; transgenic animal; genetic analysis; antiarthritic; vulnerary; gene therapy.
                                                                                                    Human secreted polypeptide PRO873, SEQ ID NO:58.
                                ABR68104 standard; protein; 545 AA
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97US-0053266P.
97US-0063121P.
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28-071-1997,
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10-MAR-1998
                                                      ABR68104;
         RESULT 14
                      ABR68104
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LOLNFORDPERIIWSNSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPPYIM 385
                                                                                                                                                                                                                                                           AISOSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKWRF 325
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                                                                                                                                         265
                APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
                                                       SHARGNWGLLDQWAALRWVQENIAAFGGDFGNVTLFGQSAGAMSISGLMMSFLASGLFHR
                                                                                                                                      SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR
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24-OCT-1997;
28-OCT-1997;
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31-OCT-1997;
31-OC
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                        Sequence 2, Application US/09264737A

| Sequence 2, Application US/09264737A
| Patent No. 6107549
| CENERAL INFORMATION:
| APPLICANT: Fend, Paul C.C.
| APPLICANT: Ruff, Thomas G.
| TITLE OF INVENTION: Engineering Plant Resistance to Pyridines via TITLE OF INVENTION: Expression of Esterase Enzymes FILE REFERENCE: 38-21(16551) RLE3 Pyridine Tolerance CURRENT APPLICATION NUMBER: US/09/264,737A
| CURRENT APPLICATION NUMBER: 60/077,377
| SALIER FILING DATE: 1998-03-10
| SALIER FILING DATE: 1998-03-10
| SALIER FILING DATE: 1998-03-10
| SALIER FILING SAPENTON NUMBER: 60/077,377
| SAQ ID NO 2: 11
| SOFTWARE: PatentIn Ver. 2.0
| SEQ ID NO 2: 12
| CROWNISM: Rabbit
| CROMNISM: Rabbit
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40.2%; Score 1251.5; DB 3; Length
Best Local Similarity 43.7%; Pred. No. 2.5e-119;
Matches 248; Conservative 117; Mismatches 175; Indels
        US-08-446-100-21
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/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-1146-661-2
US-09-1146-661-2
US-09-126-515-2
US-09-264-737-1
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Maximum Match 100%
Listing first 45 summaries
                                                                     - protein search, using sw model
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                                                                                                                             LGIWGFFSTGDEHSRGNWGHLDQVAALHWVQENIANFGGDPGSVTIFGESFTAGGESVSV 238
                                                                                                                                                                                                                                                        311 LSGTKVMRVSNKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQG--KVSSVPY 368
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APPLICANT: Hubbs,
THUBS,
TITLE OF INVENTION: BAZOMATIC Process for the Manufacture of
TITLE OF INVENTION: Ascorbic Acid, 2-Keto-L-Gulonic Acid, and Esters
TITLE OF INVENTION: 2-Keto-L-Gulonic Acid
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                            427 NVNEHDWKMLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHH---ARGIIVKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               484 RTDGADHGDEMYFLFGGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWP--R
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APPLICATION NUMBER: US 60/017,879; CFILING DATE: 17-M9-96; 25-April-97 ATTONNEY/AGENT INFORMATION:
NAME: Cheryl J. Tubach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chemical Company
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: Windows 95
SOFTWARE: Microsoft Word
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/140,933
FILING DATE: 27-August-98
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38,346
TD: 70432
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Patent No. 6022719
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REGISTRATION NUMBER: 38,346
REFERENCE/DOCKET UNBER: 70,
TELECOMMUNICATION:
TELEPHONE: 423-229-6189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER REALABLE FORM:
MEDIUM TYPE: 3.5 inch disk
COMPUTER: IBM Compatible
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INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
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P.O. Box 511
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STREET: P.C.
TTY: Kingsport
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COUNTRY:
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APPLICANT: Hubbs, John C.
TITLE OF INVENTION: Ascorbic Acid, 2-Keto-L-Gulonic Acid, and Esters of
TITLE OF INVENTION: Ascorbic Acid, 2-Keto-L-Gulonic Acid, and Esters of
TITLE OF INVENTION: 2-Keto-L-Gulonic Acid, and Esters of
TITLE OF INVENTION: 3
CORRESPONDENCES: 3
CORRESPONDENCES: Bastman Chemical Company
STREET: P.O. Box 511
CITY: Kingsport
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                             356 GWIIPMOMLGYPLSEGKLDOKTATELLWKSYPIVNVSKELTPVATEKYLGGTDDPVKK--
                                                                                  RNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDEMY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 37.6%; Score 1169.5; DB 2; Best Local Similarity 43.0%; Pred. No. 6.9e-111; Matches 249; Conservative 108; Mismatches 193;
                                                                                                                                                                                                                                                      556 RVGMKLKEKKMAFWMSLY--OSORPEK 580
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534 QAAQKLKDKEVAFWTELWAKEAARPRE 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/017,879
FILING DATE: 17-MAY-1996
ATTOMAY-1996
ATTOMAY-1996
ATTOMAY-1996
ATTOMAY-1996
REGISTRATION NUMBER: 38,346
REPERENCE/DOCKET NUMBER: 70432
TELEPHONE: 423-229-6189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: MICROSOFT WORD
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/845,295A
FILING DATE: 25-April-97
CLASSIFICATION: 435
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COUNTRY:
USA
ZIE: 37662-5075
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch disk
"MEDIUM TYPE: 1.5 inch disk
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/08845295A
Patent No. 5817490
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INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
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Amino Acid
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US-08-845-295A-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299 KSEDELLDLTLKMKFLTLDFHGDQRESHPFLPTVVDGVLLPRMPEELLABKDFTFNTVPY 358
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; Sequence 2. Application US/09150515
; Patent No. 6271006
; GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Brzymatic Process for the Manufacture of TITLE OF INVENTION: Ascorbic Acid, 2-Keto-L-Gulonic Acid, and IITLE OF INVENTION: Ascorbic Acid, 2-Keto-L-Gulonic Acid, and
                                                                                                                                                                                                                                                                                                                                                                                                                     58;
                                                                                                                                                                                                                                                                                                                                                                               Length 584;
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11 Similarity 43.0%; Pred. No. 6.9e-111;
249; Conservative 108; Mismatches 193;
                                                       08/845,295
                                                APPLICATION NUMBER: US 60/017,879; 08/
FILING DATE: 17-May-96; 25-April-97
ATTONNEY/AGENT INFORMATION:
NAME: Cheryl J. Tubach
REGISTRATION NUMBER: 38,346
REFREACOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 423-229-6189
03-Septmeber-98
                                                                                                                                                                                                       TELERAX: 423-229-1239
INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS: LENGTH: 584 amino acids
TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                          , MOLECULE TYPE: protein US-09-146-661-2
                  CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                             Linear
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Best Local S:
Matches 249
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Sequence 2, Application US/09146661
Petent No. 6136575
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Brizymatic Process for the Manufacture of
TITLE OF INVENTION: Ascorbic Acid, 2-Keto-L-Gulonic Acid, and Esters of 2-Keto-L-Gu
TITLE OF INVENTION: Acid
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSEE: Eastman Chemical Company
STREET: P.O. Box 511
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                                                                                                                                                      26 WILCWSLTLCLMAQTALGALHTKRPQVV-TKYGTLQGKQMHVG----KTPIQVFLGVPFS
                                                                                                                                                                                                                                  RPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQESWGQLASMYVST----RERYKWLRFS
                                                                                                                    Gaps
                                                                                                                  29;
                                                                               DB 3; Length 584;
                                                                                                                  Indels
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                                                                             Query Match 37.6%; Score 1169.5; DB 3; Best Local Similarity 43.0%; Pred. No. 6.9e-111; Matches 249; Conservative 108; Mismatches 193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/146,661
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IBM Compatible
SYSTEM: Windows 95
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COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 incl
          ; TOPOLOGY: Linear
; MOLECULE TYPE: protein
US-09-140-933-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM:
SOFTWARE: Microso
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CITY: Ki
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      TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297 NHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPEBIIWSMSPVVDGVVIPDDPLV
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                                                                                                                                               Indels
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                                               542 YNKDEKYLQLDFTTRVGMKLKEKKMAFWMSLYQSQRPEK 580
                                                                  Query Match
36.8%; Score 1145; DB 4;
Best Local Similarity 42.8%; Pred. No. 2.2e-108;
Matches 249; Conservative 91; Mismatches 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 LPSLLPTAGAGWSMRWILCWSLTLCLMAQTALG-
                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                      RESULT 6
US-10-023-515-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60 KPPLGSLRFAPPQPAEPWSFVKNTTSYPPMCCQDPVVEQMISDLFTNFTGKERLT-LEFS 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EDCLYLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREK--VVLVFLQHR 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGIFGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQS--AGAMSISG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LMMSPLASGLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQI--LVNCLRA 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LSGTKVMRVSNKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQG--KVSSVPY 368
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26 WILCWSLTLCLMAQTALGALHTKRPQVV-TKYGTLQGKQMHVG----KTPIQVFLGVPPS 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 WLL---PLVLTSLASSATWAGQPASPPVVDTAQGRVLGKYVSLEGLAFTQPVAVFLGVPPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LLGVNNLEFNWLLPYIMKFPLNRQAMRKETITWMLWSTRTLLNITKEQVPLV--VEEYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 127 NVNEHDWKMLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHH---ARGIIVKP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 37.6%; Score 1169.5; DB 3; Length Best Local Similarity 43.0%; Pred. No. 6.9e-111; Matches 249; Conservative 108; Mismatches 193; Indels
                                                                                                                                                                                                                                                                                 08/845,295
   2-Keto-L-Gulonic Acid
                                                                                                                                                                                                                                             CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION UNBER: US 60/017,879; 08/
FILING DATE: 17-May-96; 25-April-97
ATTORNEY/AGENT INFORMATION:
NAME: Cheryl J. Tubach
REGISTRATION NUMBER: 38,346
REFERENCE/DOCKET NUMBER: 70432
                                        Eastman Chemical Company
P.O. Box 511
                                                                                                                                                                                                                     US/09/150,515
                                                                                                               ZIP: 37662-5075

COMPUTER READBLE FORM:
MEDIUM TYPE: 3.5 inch disk
COMPUTER: IBM Compatible
ODERATING SYSTEM: Windows 95
SOFTWARE: Microsoft Word
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/150,F
                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: 423-229-6189
                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS: LENGTH: 584 amino acids TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                              423-229-1239
TITLE OF INVENTION: 2-:
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE: protein US-09-150-515-2
                                                                        Kingsport
Tennessee
                                            ADDRESSEE:
STREET: P.
                                                                       CITY: Kir
STATE: Te
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46 HTKRPQVVTKYGTLQGKQMHVGK-----TPIQVFLGVPFSRPPLGILRFAPPEPPEP
                                                                                               Sequence 1, Application US/09264737A

Sequence 1, Application US/09264737A

Sequence 1, Application US/09264737A

Sequence 1, Application US/09264737A

Parent No. 6107549

TERENT INFORMATION:

APPLICANT: Ruff, Thomas G.

TITLE OF INVENTION: Expression of Esterase Ensymes

TITLE OF INVENTION: Expression of Esterase Ensymes

TITLE OF INVENTION: Expression of Esterase Ensymes

FILE REFERENCE: 38-21(10551) RLE3 Pyridine Tolerance

CURRENT APPLICATION NUMBER: 08/09/264,737A

CURRENT FILING DATE: 1998-03-09

EARLIER APPLICATION NUMBER: 60/077,377

SERLIER FILING DATE: 1998-03-10

NUMBER OF SEQ.ID NOS: 11

SEQ.ID NO 1

SEQ.ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
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US-09-264-737-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  316 VMRVSNKMRFLQLNFQRDPEBIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNL 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 LLETTLKIGNSYLWTYRETQRESTLLGTVIDGMLLLKTPEELQRERNFHTVPYMVGINKQ 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    376 EFNWLLP-YIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWK 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 EFGWLIPMQLMSYPLSEGQLDQXTAMSLLGSPIPLFAIAKELIPEATBKYLGGTD--DTV 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            435 MLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDE 493
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .,
                                             APPLICANT: Broomfield, Clarence A
APPLICANT: Millard, Charles B
APPLICANT: Millard, Charles B
APPLICANT: Lockridge, Oksana
TITLE OF INVENTION: Site-Directed Mutagenesis of Esterases
CORRESPONDENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/446,100
FILING DATE: 19-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31.6%; Score 983.5; DB 3; 43.6%; Pred. No. 5.6e-92; ative 91; Mismatches 158;
                                                                                                                                            ADDRESSEE: Hendricks and Assoc.
STREET: 9669 A Main Street, P.O. Box 2509
CITY: Fairfax
                                                                                                                                                                                                                                                                                                                                                                                      Sequence 26, Application US/08446100 Patent No. 6001625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: human esterases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-terminal
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Best Local Similarity 43.6
Matches 196; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
                                  INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FRAGMENT TYPE: NORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YES
                                                                                                                                                                                            CITY: Fairfax
STATE: VA
                                                                                                                                                                                                                                                     22031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-446-100-26
                                                                                                                                                                                                                                COUNTRY:
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241 EFGWLIPMQLMSYPLSEGQLDQKTAMSLLGSPIPLFAIAKELIPEATEKYLGGTD--DTV 298
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                                                                                                                                                             435 MLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDE
                                                                                                                                                                                                                                                    494 MYFLFGGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Bromfield, Clarence A
APPLICANT: Miland, Charles B
APPLICANT: Miland, Charles B
APPLICANT: Lockridge, Oksana
TITLE OF INVENTION: Site-Directed Mutagenesis of Esterases
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hendricks and Assoc.
STREET: 9669 A Main Street, P.O. Box 2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
COMPUTER: PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/446,100
FILING DATE: 19-MAY-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
31.6%; Score 983.5; DB 3;
Best Local Similarity 43.6%; Pred. No. 5.6e-92;
Matches 196; Conservative 91; Mismatches 158;
                                                                                                                                                                                                                                                                                                                                                                      554 TTRVGMKLKEKKMAFWMSLYQSQRPEKQRQ 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Hendricks, Glenna
REGISTRATION NUMBER: 32,535
REFERNCE/DOCKET NUMBER: broomfield
TELECOMMUNICATION:
TELEPHONE: (703) 425-4250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 31, Application US/08446100
Patent No. 6001625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: human esterases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (703) 425-2742: INFORMATION FOR SEQ ID NO: 3 SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein HYPOTHETICAL: YES
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HYPOTHETICAL: XE
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ORIGINAL SOURCE:
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                            494 MYFLFGGPFATGLSMGKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLOLDF 553
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 PLAKNLFHRAISESGVALTSVLVKKGDVKPLAEQIAITAGCKTTTSAAMVHCLRQKTEEE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             316 VMRVSNKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNL 375
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                                                                                                                                                                                                                                                                                                           APPLICANT: Broomfield, Clarence A
APPLICANT: Millard, Charles B
APPLICANT: Millard, Charles B
APPLICANT: Lockridge, Oksana
ATTLE OF INVENTION: Site-Directed Mutagenesis of Esterases
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
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CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/446,100

FILING DATE: 19-MAY 1995

CLASSIFICATION: 435

ATTONREY/AGENT INFORMATION:

NAME: Hendricks, Glanna

REGISTRATION NUMBER: 32,535

REFRENCE/DOCKET NUMBER: broomfield

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION OF 325-2767

INFORMATION E: (703) 425-4250

INFORMATION FOR SEQ ID NO: 30:

SEQUENCE CHRRACTERISTICS:

LENGTH: 454 amino acids
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Pred. No. 5.6e-92;
                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Hendricks and Assoc.
STREET: 9669 A Main Street, P.O. Box 2509
CITY: Pairfax
                                                                                                                 554 TTRVGMKLKEKKMAFWMSLYQSQRPEKQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                             Sequence 30, Application US/08446100
Patent No. 6001625
GENERAL INFORMATION:
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Best Local Similarity 43.6%;
Matches 196; Conservative 9:
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amino acid
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US-08-446-100-30
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ORGANISM:
US-08-446-100-30
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EHCLYLNIYTPADLTKKNRLPVMVWIHGGGLMVGAASTYDGLALAAHENVVVVIIQYRLG 60
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                                    I FGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 27, Application US/08446100
Patent No. 601625
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Broomfield, Clarence A
APPLICANT: Millard, Charles B
APPLICANT: Millard, Charles B
APPLICANT: Lockridge, Oksana
TITLE OF INVENTION: Site-Directed Mutagenesis of Esterases
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/446,100
FILING DATE: 19-MAY-1995
ATTONENY/AGENT INPOMEATION:
NAME: Hendricks, Glenna
REGISTRATION NUMBER: 32,535
REFRENCE/DOCKET UNMBER: 32,535
REFRENCE/DOCKET UNMBER: 32,535
REFRENCE/DOCKET UNMBER: 34,535
REFRENCE/DOCKET UNMBER: 32,535
RELECOMMULCATION INFORMATION:
TELEPHONE: (703) 425-4250
ITELEPHONE: (703) 425-4267
INFORMATION FOR SEQ ID NO: 27:
COMPUTER THE TELEPHONE: (703) 425-2767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9669 A Main Street, P.O. Box 2509
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amino acid
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TOPOLOGY: unknown
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MYFLFGGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDF 553
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                                                                                                                                                                                                                                                            IFGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMS
                                                                                                                                                                                                                                                                                  137 EDCLYLNVYAPARAPGDPOLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLG
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                                                                                             Length 454;
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Patent No. 6001625
GENERAL INFORMATION:
APPLICANT: Broomfield, Clarence A
APPLICANT: Millard, Charles B
APPLICANT: Millard, Charles B
APPLICANT: Millard, Site-Directed Mutagenesis of Esterases
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                    Indels
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                                                                                             31.5%; Score 981.5; DB 3;
43.6%; Pred. No. 8.9e-92;
iive 91; Mismatches 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554 TTRVGMKLKEKKMAFWMSLYQSQRPEKQRQ 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/446,100
FILING DATE: 19-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: broomfield IELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3: Hendricks and Assoc.
9669 A Main Street, P.O.
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ATORNEY AGENT INFORMATION:
NAME: Hendricks, Glenna
REGISTRATION NUMBER: 32,535
REFRENCE/DOCKET NUMBER: brc
                                    human esterases
N-terminal
                                                                                                                                         Conservative
                                                                                                                   Similarity
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                 ORIGINAL SOURCE:
ORGANISM: huma
FRAGMENT TYPE:
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US-08-446-100-28
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COUNTRY:
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US-08-446-100-27
                                                                                                                                         Matches 196;
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                                                                                               Query Match
                                                                                                                       Best Local
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OPERATING SYSTEM:
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ANTI-SENSE: Y
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US-10-023-515-4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 PLAKNIFHRAISESGVALTSVLVKKGDVKPLAEQIAITAGCKTTTSAAMVHCLRQKTEEE 180
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                                                                                                                                                                                                                                                                          Length 454;
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Patent No. 6001625
GENERAL INFORMATION:
APPLICANT: Broomfield, Clarence A
APPLICANT: Millard, Charles B
APPLICANT: Lockridge, Oksana
TITLE OF INVENTION: Site-Directed Mutagenesis of Esterases NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                       ; Score 977.5; DB 3; Length
; Pred. No. 2.3e-91;
90; Mismatches 159; Indels
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9669 A Main Street, P.O. Box 2509
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; TELEFAX: (703) 425-4250
TELEFAX: (703) 425-2767
: INFORMATION FOR SEQ ID NO: 28:
SEQUENCE CHARACTERISTICS:
LENGTH: 454 amit
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 43.6%;
Matches 196; Conservative 9
                                                                                                                                                                                                                          ORGANISM: human esterases
                                                                      LENGTH: 454 amino acids
TYPE: amino acids
STRANDEDNESS: single
                                                                                                                                                                                            N-terminal
                                                                                                                                         MOLECULE TYPE: protein
HYPOTHETICAL: YES
ANTI-SENSE: YES
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STREET: 9669 A
CITY: Fairfax
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US-08-446-100-29
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COUNTRY:
ZIP: 220;
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137 EDCLYLMVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLG 196
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Batent No. 6664091
GENERAL INCOMMATION:
APPLICANT: CURTIS, RORY A. J.
APPLICANT: Silos-Santiago, Inmaculada
ITLE OF INVENTION: 53010, A NOVEL HUMAN CARBOXYLESTERASE
TITLE OF INVENTION: FAMILY MEMBER AND USES THEREOF
SOFTWARE: Patentin Release #1.0, Version #1.25
UNRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/446,100
FILING DATE: 19-MAY-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31.4%; Score 977.5; DB 3;
43.6%; Pred. No. 2.3e-91;
tive 90; Mismatches 159;
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                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 52,303
REFERENCE/DOCKET NUMBER: broof the communication incorration: TELEPHONE: (703) 425-4250
TELEFAX: (703) 425-2767
INFORMATION FOR SEQ ID NO: 29: SEQUENCE GHARACTERISTICS:
LENGTH: 454 amino acids
TYPE: amino acids
                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Hendricks, Glenna
REGISTRATION NUMBER: 32,535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human esterases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 43.6%;
Matches 196; Conservative 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-terminal
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ALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQR 332
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          430 EHDWKMLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHH--ARGIIVKPRTDG 487
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                                                                                                                                                                                                                                                                 --TALGALHTKR-POVVTKYGTLQGKOMHVGKT
                                                                                                                                                                                                                                                                                                                              70 ---PIQVFLGVPFSRPPLGILRFAPPBPPBPWKGIRDATTYPPGCLQESWGQL---
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                                                                                                                                                                                                                                                                                                                                                                                           -----ASMYVSTRERYKWLRFSEDCLYLNVYAPAR-----
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                                                                                                                                                                                                      Score 849; DB 4; L. Pred. No. 1e-77; 2; Mismatches 191;
CURRENT FILING DATE: 2000-01-26
PRIOR APPLICATION NUMBER: PCT/US99/09365
PRIOR FILING DATE: 1999-04-29
PRIOR FILING DATE: 1998-04-29
NUMBER OF SEQ ID NOS: 24
SOFTHARE: Patentin version 3.1
LENGTH: 836
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                                                                                                                                                                                                       27.3%; Sco
33.2%; Pre
tive 92;
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Job time : 20 secs
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US-09-491-356C-21
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Best Local S
Matches 215
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                                                                                                                                               TYPE: PRT
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APPLICANT: Philibert, Edward I.
APPLICANT: Ginns, Edward I.
APPLICANT: Delisi, Lynn
TITLE OF INVENTION: IDENTIFICATION OF POLYMORPHISMS IN THE PCTG4 REGION OF XQ13
FILE REPERBNCE: 9465.6USII
CURRENT APPLICATION NUMBER: US/09/491,356C
                                                                                                                                                                                                                                                                                                       24;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --MRKET-----ITKMLWSTRTLLNITKEQVPL---VVEEYLDNVNEHDWKMLRNRM 440
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                                                                                                                                                                                                                                                                                                                                                                 72
                                                                                                                                                                                                                                                                                                                                     67 GKIPIQVFLGVPFSRPPLGILRFAPPEP-PEPWKGIRDATIYPPGCLQ-ESWG-QLASMY
                                                                                                                                                                                                                                                                                                                                                         124 VSTR-----ERYKWLRFSEDCLYLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASS---
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                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                    17;
                                                                                                                                                                                                                                                                        Length 574;
                                                                                                                                                                                                                                                                                                       Indels
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    FILE REFERENCE: 10448-122001
CURRENT APPLICATION NUMBER: US/10/023,515
CURRENT FILING DATE: 2001-12-18
FRIOR APPLICATION NUMBER: 60/256,369
PRIOR FILING DATE: 2000-12-18
PRIOR FILING DATE: 2000-12-18
NUMBER OF SEQ ID NOS: 6
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
                                                                                                                                                                      TYPE: PRT
ORGANISM: Artificial Sequence
PEATURE:
CHER INCOMATION: Consensus sequence
US-10-023-515-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 21, Application US/09491356C Patent No. 6566061 GENERAL INFORMATION:
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US-09-491-356C-21
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Length 836; Indels 212

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1 MPSTVLPSTVLPSLLPTAGA......KMAFWMSLYQSQRPEKQRQF 584
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| cgn2_6/ptodata/1/pubpaa/USO7_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUBL.pep:*
| cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUBL.pep:*
| cgn2_6/ptodata/1/pubpaa/USO6_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO6_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO8_NEW_PUB.pep:*
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| cgn2_6/ptodata/1/pubpaa/USO8_NEW_PUB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO8_NEW_PUB.pep:*
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| cgn2_6/ptodata/1/pubpaa/USO9_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_PUBCOMB.pep:*
| cgn2_6/ptodata/1/pubpaa/USO0_PUBCOMB.pep:*
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-978-665A-254
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US-10-199-670-58
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US-10-201-888-188
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US-10-201-888-188
US-10-201-888-188
US-10-201-888-188
US-10-201-888-188
US-10-201-888-188
US-10-201-888-188
US-10-174-581-58
US-10-176-749-58
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## ALIGNMENTS

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61 GKQMHVGKTP1QVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQESWGQLA 120
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RESULT 1
US-10-001-227-2
Sequence 2, Application US/10001227
Sequence 2, Application Wo. US20030166900A1
GENERAL INFORMATION:
FAPLICANT: RAPELLER-LIBERMANN
FAPLICANT: RAPELLER-LIBERMANN
TITLE OF INVENTION: METHODS OF USING 18903 TO TREAT PAIN AND
TITLE OF INVENTION: MAIN-RELATED DISORDERS
FILE REFERENCE: MNI-199
CURRENT APPLICATION NUMBER: US/10/001,227
CURRENT TILING DATE: 2001-11-30
FRIOR APPLICATION NUMBER: 60/250929
FRIOR APPLICATION NUMBER: 60/250929
FRIOR FILING DATE: 2001-11-30
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 584
TYPE: PRT
CREAMTEM: 1000 Sapiens
US-10-001-227-2
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Matches 584; Conservative
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Fong, Sherman Gao, Wel-Qiang Gerber, Hanspeter Gerritsen, Mary B. Goddard, Audrey Godowski, Paul J. Grimaldi, J. Christopher Gurney, Austin L. Hillan, Kenneth J

Kljavin, Ivar J. Kuo, Sophia S. Napier, Mary A.

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AAREKVVLVFLQHRLGIFGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDFGNVTL 240
                             181 AAREKVULVELQHRLGIFGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTL 240
                                                                     FGOSAGAMSISGLMMSPLASGLFHRAISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNS 300
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APPLICANT: INCYTE GENOMICS, INC.; BAUGHN, Mariah R.;
APPLICANT: BRUS, Christopher M.; DAS, Debopriya;
APPLICANT: BELEGEANE, Angelo M.; DING, Li;
APPLICANT: ELLIOT, Vicki S.; GANDHI, Amena R.;
APPLICANT: ELLIOT, Vicki S.; GANDHI, And M.;
APPLICANT: ELLIOT, Vicki S.; Madhusudan M.;
APPLICANT: FRAMKUMAR, Jayalaxmi, RING, Huijun Z.;
APPLICANT: FRAMKUMAR, Jayalaxmi, RING, Huijun Z.;
APPLICANT: FRAMKUMAR, Jayalaxmi, RING, Huijun Z.;
APPLICANT: THANGAVELU, Kavitha; THORITON, Michael, APPLICANT: THANGAVELU, Kavitha; THORITON, Michael, APPLICANT: TRIBOULEY, Catherine M.; CHWIA, Narinder K.;
APPLICANT: TRIBOULEY, Catherine M.; CHWIA, Narinder YOR, Monique G.; YUB, Henry
TITLE OF INVENTION BUNG ETABOLIZING ENZYMES
FILE REFERENCE: PI-0185 USW
CURRENT APPLICATION NUMBER: US 60/223,055
PRIOR APPLICATION NUMBER: US 60/224,728
PRIOR FILING DATE: 2000-08-11
PRIOR APPLICATION NUMBER: US 60/228,067
PRIOR PILING DATE: 2000-08-13
PRIOR FILING DATE: 2000-08-24
PRIOR FILING DATE: 2000-08-34
PRIOR FILING DATE: 2000-08-34
PRIOR FILING DATE: 2000-09-30
PRIOR APPLICATION NUMBER: US 60/234,269
PRIOR FILING DATE: 2000-09-30
PRIOR PILING DATE: 2000-09-30
NUMBER OF SEQ ID NOS: 38
SOFTWARE: PERL PROGRAM
SEQ ID NO 10
LENGTH: 584
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Publication No. US20040110259A1
GENERAL INFORMATION:
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                                                                                   100.0%; Score 3112; DB 16;
100.0%; Pred. No. 2.5e-289;
ive 0; Mismatches 0;
NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No: 7478588CD1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 254, Application US/09978295A Patent No. US20020156006A1 GENERAL INFORMATION: APPLICANT: Ashkenazi, Avi APPLICANT: Baker Kevin P.
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Filvaroff, Ellen
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Desnoyers, Luc
Eaton, Dan
                                                                                 Query Match
Best Local Similarity 100.
Matches 584; Conservative
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                                            US-10-343-593-10
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PRIOR APPLICATION NUMBER: 60/080333
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                                                                                                              Pan, James;
Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
Tumas, Daniel
Williams, P. Mickey
Wood, William I.
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Pong, Sherman
Gao, Wei-Qiang
Gerber, Hanspeter
Geritsen, Mary E.
Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
                                                                                                 Sequence 254, Application US/09978697
Patent No. US20020169284A1
GENERAL INFORMATION:
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Paoni, Nicholas F.
Roy, Margaret Ann
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Stewart, Timothy A.
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Williams, P. Mickey
Wood, William I.
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Filvaroff, Ellen
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Kuo, Sophia S.
                                                                                                                                                                                               APPLICANT: Ashkenazi, Avi
APPLICANT: Baker Kevin P.
APPLICANT: Botstein, David
APPLICANT: Desnoyers, Luc
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Daniel
                                                                                                                                                                                                                                                                                                                               Eaton, Dan
                                           RESULT 4
US-09-978-697-254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47 LGSTSTPATTSAPSSGFGTGLFGSKPATGFTLGGTNTGALHTKRPQVVTKYGTLQGKQMH 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   107 VGKTPIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGWSLALSPGWSAVARS 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    111 ------KWLRFSEDCLYLNVY 145
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  227 APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD 286
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PRIOR FILING DATE: 1998-05-07
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APPLICANT: Wood, William I.

TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same

FILE REFERENCE PS03PPLCAT S00.10-0.7

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PRIOR FILING DATE: 2001-0.7-30

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PRIOR APPLICATION NUMBER: 60/077632

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PRIOR PRILING DATE: 1998-03-10

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PRIOR PRILING DATE: 1998-03-12

PRIOR APPLICATION NUMBER: 60/07791

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Best Local Similarity 80.3%;
Matches 399; Conservative v 111 g g 8 ð ò

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                       227 APARAPGDPQLPVMVWFPGGAPIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD 286
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                                                                                                                                                  AISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRF 325
                                                                                                                                                                           407 LÖLNFQRDPEBIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGGNNLEFNWLLPP- 464
                                                                                                                                                                                                                                                                                                        445
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                                                                                                386 KFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRMMDIVQ
146 APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
                                                                         SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same FILE REFERENCE: P2630PIG9 CURRENT APPLICATION NUMBER: US/09/978,192A CURRENT PILING DATE: 2001-10-15 PRIOR APPLICATION NUMBER: 09/918585 PRIOR APPLICATION NUMBER: 60/062250 PRIOR FILING DATE: 2001-07-30 PRIOR FILING DATE: 1997-10-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Sequence 254, Application US/09978192A
; Patent No. US20020177553A1
; GENERAL INFORMATION:
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R PRILING DATE: 1997-11-03
R FILING DATE: 1997-11-03
R APPLICATION NUMBER: 60/065311
R FILING DATE: 1997-11-13
R APPLICATION NUMBER: 60/065364
R FILING DATE: 1997-11-13
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Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
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Kuo, Sophia S.
Napier, Mary A.
Pan, James,
Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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APPLICANT: Baker Kevin P.
APPLICANT: Botstein, David
APPLICANT: Besnoyers, Luc
APPLICANT: Eaton, Dan
APPLICANT: Faton, Dan
APPLICANT: Filvaroff, Ellen
APPLICANT: Filvaroff, Ellen
APPLICANT: Fong, Sherman
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Williams, P. Mickey
Wood, William I.
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Gerritsen, Mary E.
Goddard, Audrey
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Gao, Wei-Qiang
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R FILING DATE: 1998-03-20
R APPLICATION NUMBER: 60/078939
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R APPLICATION NUMBER: 60/079294
R FILING DATE: 1998-03-25
R APPLICATION NUMBER: 60/079656
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APPLICATION NUMBER: 60/079664
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APPLICATION NUMBER: 60/079689
FILING DATE: 1998-03-27
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APPLICATION NUMBER: 60/079728
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PPLICATION NUMBER: 60/079786
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APPLICATION NUMBER: 60/079920
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APPLICATION NUMBER: 60/079923
FILING DATE: 1998-03-30
APPLICATION NUMBER: 60/080105
FILING DATE: 1998-03-31
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APPLICATION NUMBER: 60/080165
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APPLICATION NUMBER: 60/080328
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FILING DATE: 1998-04-08
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APPLICATION NUMBER: 60/081071
FILING DATE: 1998-04-08
APPLICATION NUMBER: 60/081195
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APPLICATION WINBER: 60/081203
FILING DATE: 1998-04-09
APPLICATION NUMBER: 60/081229
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APPLICATION NUMBER: 60/080107
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APPLICATION NUMBER: 60/080327
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APPLICATION NUMBER: 60/081955
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FILING DATE: 1998-04-15
APPLICATION NUMBER: 60/081952
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APPLICATION NUMBER: 60/081817
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DE AFFLICATION NUMBER: 60/084141

DR APPLICATION NUMBER: 60/08441

DR APPLICATION NUMBER: 60/084637

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DR APPLICATION NUMBER: 60/084639

DR FILING DATE: 1998-05-07

DR APPLICATION NUMBER: 60/084640

DR APPLICATION NUMBER: 60/084640

DR APPLICATION NUMBER: 60/084640

DR APPLICATION NUMBER: 60/084640

DR APPLICATION NUMBER: 60/084620

DR FILING DATE: 1998-05-07

DR PLING DATE: 1998-05-13

DR APPLICATION NUMBER: 60/085339

DR PLING DATE: 1998-05-13

DR APPLICATION NUMBER: 60/085328

DR PLING DATE: 1998-05-13

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R APPLICATION NUMBER: 60/083742
R FILING DATE: 1998-04-30
R PILING DATE: 1998-05-05
R FILING DATE: 1998-05-05
R APPLICATION NUMBER: 60/084414
                                                                                                                          R APPLICATION NUMBER: 60/082704
R FILING DATE: 1998-04-22
R APPLICATION NUMBER: 60/082804
R FILING DATE: 1998-04-22
R APPLICATION NUMBER: 60/082700
R FILING DATE: 1998-04-22
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APPLICATION NUMBER: 60/083500
FILING DATE: 1000
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PPLICATION NUMBER: 60/083558
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PLICATION NUMBER: 60/082796
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FILING DATE: 1998-04-28
APPLICATION NUMBER: 60/083392
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FILING DATE: 1998-04-22
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FILING DATE: 1998-04-27
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PPLICATION NUMBER: 60/083392
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APPLICATION NUMBER: 60/083495
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FILING DATE: 1938-04-29
APPLICATION NUMBER: 60/083499
FILING DATE: 1998-04-29
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LING DATE: 1998-04-15
PLICATION NUMBER: 60/081838
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445 106 VGKTPIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPG------- 110 205 SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR 265 346 AISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQIIVNCLRALSGTKVMRVSNKWRF 325 326 LOLINFORDPERIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385 407 LQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPY-- 464 465 -------NITKEQVPLVVEEYLDNVNEHDWKALRNRMYDIVQ 499 226 286 47 LGSTSTPATTSAPSSGFGTGLFGSKPATGFTLGGTNTGALHTKRPQVVTKYGTLQGKQMH 287 SHARGIWGLLDQMAALRWVQENIAAFGGDPGWVTLFGQSAGAMSISGLMMSPLASGLFHR APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD 386 KFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRMMDIVQ 6 DPSTVLPSLLPTAGAGWSMRWILCWSLTLCLMAQTALGALHTKRPQVVTKYGTLQGKQMH ------CLQESWGQLASMYVSTRERYKWLRFSEDCLYLNVY Gaps 67; Length 545; 26; Indels DB 9; Query Match
Best Local Similarity 80.3%; Pred. No. 3.6e-185;
Matches 399; Conservative 5; Mismatches 26; RESULT 6
US-09-832A-254
; Sequence 254, Application US/0999832A
; Publication No. US20020192706A1
; GENERAL INFORMATION...
; APPLICANT: Baker Kevin P.
; APPLICANT: Botstein, David
; APPLICANT: Botstein, David
; APPLICANT: Besnoyers, Luc
; APPLICANT: Desnoyers, Luc
; APPLICANT: Desnoyers, Luc Ferrara, Napoleon Filvaroff, Ellen Filvaroff, Ellen Gang, Sherman Gao, Wel-Qiang Gerriteen, Mary E. Goddwski, Paul J. Grimaldi, J. Christopher Gurney, Austin L. Hillan, Kenneth J PRIOR APPLICATION NUMBER: 60/085579
PRIOR FILING DATE: 1998-05-15
PRIOR APPLICATION NUMBER: 60/085580
PRIOR FILING DATE: 1998-05-15
PRIOR APPLICATION NUMBER: 60/085573
PRIOR APPLICATION NUMBER: 60/085574
PRIOR APPLICATION NUMBER: 60/085697
PRIOR APPLICATION NUMBER: 60/085697 446 DATFVYATLOTAHYHRD 462 APPLICANT:
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APPLICANT: 99 111 206 266 347 146 APPLICANT: APPLICANT: APPLICANT: 원 qq ð P ò 임  $\dot{\delta}$ g ò 임 ò 엄 ò d ò ò

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R FILING DATE: 1998-04-23

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R APPLICATION NUMBER: 60/083495

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R APPLICATION NUMBER: 60/083496

R FILING DATE: 1998-04-29

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R APPLICATION NUMBER: 60/083545

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R APPLICATION NUMBER: 60/083554

R APPLICATION NUMBER: 60/083558
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R FILING DATE: 1998-04-15
R APPLICATION NUMBER: 60/081952
R FILING DATE: 1998-04-15
R APPLICATION NUMBER: 60/081838
R FILING DATE: 1998-04-15
R APPLICATION NUMBER: 60/082568
                                                                                                   APPLICATION NUMBER: 60/080328
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APPLICATION NUMBER: 60/081817
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APPLICATION NUMBER: 60/084366
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APPLICATION NUMBER: 60/084441
FILING DATE: 1998-05-06
APPLICATION NUMBER: 60/084637
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APPLICATION NUMBER: 60/080194
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APPLICATION NUMBER: 60/080327
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500 DATFVYATLQTAHYHRE 516

Baton, Dan Ferrara, Napoleon Filvaroff, Ellen Fong, Sherman Gao, Wal-Qiang Gerber, Hanspeter Gerritsen, Mary E.

Goddard

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### APPLICANT NUMBER | 67,000 |

**APPLICANT NUMBER | 67,000 |
                                                                                                                             US-09-978-189-254
; Sequence 254, Application US/09978189
; Publication No. US20030004102A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                 APPLICANT: Ashkenazi, Avi
APPLICANT: Baker Kevin P.
APPLICANT: Botstein, David
APPLICANT: Desnoyers, Luc
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                                                          PRIOR FILING DATE: 1998-05-07 PRIOR APPLICATION NUMBER: 60/084640 PRIOR APPLICATION NUMBER: 60/084640 PRIOR APPLICATION NUMBER: 60/084508 PRIOR PILING DATE: 1998-05-07 PRIOR FILING DATE: 1998-05-07 PRIOR PILING DATE: 1998-05-13 PRIOR PILING DATE: 1998-05-13 PRIOR PILING DATE: 1998-05-13 PRIOR PILING DATE: 1998-05-13 PRIOR APPLICATION NUMBER: 60/08538 PRIOR PILING DATE: 1998-05-13 PRIOR PILING DATE: 1998-05-13 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING DATE: 1998-05-15 PRIOR PILING 
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APPLICATION NUMBER: 60/081955
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APPLICATION NUMBER: 60/081229
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APPLICATION NUMBER: 60/082796
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6 LPSTVLPSLLPTAGAGWSMRWILCWSLTLCLMAQTALGALHTKRPQVVTKYGTLQGKQMH

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67; Gaps

DB 10; Length 545; 185; 26; Indels 67;

Query Match 65.1%; Score 2026.5; DB 10 Best Local Similarity 80.3%; Pred. No. 3.6e-185; Matches 399; Conservative 5; Mismatches 26;

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                                                                                                                              66 VGKTPIQVFIGVPFSRPPLGILRFAPPEPPFPWKGIRDATTYPPG------- 110
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 DB 10; Length 545;
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Score 2026.5; DB 10;
Pred. No. 3.6e-185;
5; Mismatches 26;
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Filvaroff, Ellen
Filvaroff, Ellen
Gao, Wei-Qiang
Gerber, Hanspeter
Gerritsen, Mary E.
Goddard, Audrey
Goddwski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
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Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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Williams, P. Mickey
Wood, William I.
   65.1%;
ilarity 80.3%;
Conservative
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Kuo, Sophia S.
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APPLICANT: Baker Kevin P.
APPLICANT: Botstein, David
APPLICANT: Desnoyers, Luc
APPLICANT: Eaton, Dan
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   Query Match
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                                                                                                                                                                                        266 AISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKWRF 325
                                                                                                                                                                                                                      347 AISQSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMFF 406
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                                                        APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD 205
                                                                                 206 SHARGNWGLLDQWAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR 265
                                                                                                                                                   LQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385
                                                                                                                                                                                                                                                                               167 RLTATSASRVQASLLPQPLSVWGYRCLQBSWGQLASMYVSTRERYKWLRFSEDCLYLNVY 226
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APPLICANT: Wood, William I.

TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2630PIC22
CURRENT APPLICATION NUMBER: US/09/978,608A
CURRENT FILING DATE: 2001-10-16
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Goddard, Audrey
Goddwski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
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Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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                                                                                                                                                                                                                                                                                                                                                                                                                               DATFVYATLOTAHYHRE 516
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APPLICANT: Baker Kevin P.
APPLICANT: Betstein, David
APPLICANT: Desnoyers, Luc
APPLICANT: Eaton, Dan
APPLICANT: Ferrara, Napoleon
APPLICANT: Filvaroff, Ellen
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Kuo, Sophia S.
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Gao, Wei-Qiang
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CORGANISM: Homo sapiens
US-09-978-608A-254
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US-09-978-608A-254
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APPLICANT:
APPLICANT:
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APPLICANT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107 VGKTPIQVFLGVPFSRPPLGILRFAPPEPPWKGIRDATTYPPGWSLALSPGWSAVARS 166
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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 2026.5; DB 10; Length
Pred. No. 3.6e-185;
5; Mismatches 26; Indels
                                                            FILE REFERENCE: P2630P4C15
CURRENT APPLICATION NUMBER: US/09/978,585A
CURRENT APPLICATION NUMBER: US/09/978,585A
NUMBER OF SEQ ID NOS: 624
Prior Application removed - See File Wrapper or Palm SEQ ID NO 554
LENGTH: 545
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Publication No. US20030050239A1
GENERAL INFORMATION:
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Grimaldi, J. Christopher
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Best Local Similarity 80.3%;
Matches 399; Conservative
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Filvaroff, Ellen
Fong, Sherman
Gao, Wei-Qiang
Gerber, Hanspeter
Gerritsen, Mary E.
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Botstein, David
Desnoyers, Luc
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APPLICANT: Baker Kevin P
                                                                                                                                                                                                                                                                                                                        ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-978-585A-254
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US-09-978-191A-254
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PRIOR APPLICATION NUMBER: 60/084637
PRIOR APPLICATION NUMBER: 60/084640
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R FILING DATE: 1998-03-31

R APPLICATION NUMBER: 60/080327

R FILING DATE: 1998-04-01

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R APPLICATION NUMBER: 60/083322
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FILING DATE: 1998-03-26
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APPLICATION NUMBER: 60/082569
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APPLICATION NUMBER: 60/082704
FILING DATE: 1998-04-22
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FILING DATE: 1998-03-27
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FILING DATE: 1998-04-2
APPLICATION NUMBER: 60/082700
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FILE REFERENCE: P6630PD-17

CURRENT APPLICATION NUMBER: US/09/978,403A

CURRENT APPLICATION NUMBER: 00/06220

PRIOR FILING DATE: 1997-10-17

PRIOR PLILNG DATE: 1997-11-03

PRIOR PLILNG DATE: 1997-11-03

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US-09-978-403A-254
Sequence 254, Application US/09978403A
Sequence 254, Application No. US20030050240A1
GENERAL INFORMATION:
APPLICANT: Ashkenatl, Avi
APPLICANT: Baker Kevin P.
APPLICANT: Botetin, David
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Grimaldi, J. Christopher
Gurney, Austin J.
Hillan, Kenneth J
Kljavin, Ivar J.
Kljavin, Ivar J.
Napler, Mary A.
Pan, James;
446 DATFVYATLOTAHYHRD 462
                                                     500 DATEVYATLOTAHYHRE 516
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Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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Filvaroff, Ellen
Fong, Sherman
Gao, Wei-Qiang
Gerber, Hanspeter
Gerriteen, Mary E.
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Desnoyers, Luc
Eaton, Dan
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206 SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR 265
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        326 LQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIM 385
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107 VGKTPIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGWSLALSPGWSAVARS 166
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APPLICANT: Williams, P. Mickey
APPLICANT: Wood, William I.
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2630PIC25
CURRENT APPLICATION NUMBER: U5/09/978,564A
CURRENT APPLICATION NUMBER: U5/09/978,564A
FRIOR APPLICATION NUMBER: 09/918585
PRIOR FILING DATE: 2001-07-30
PRIOR FILING DATE: 1997-10-17
PRIOR FILING DATE: 1997-10-17
PRIOR FILING NATE: 60/064249
                                                                                              167 RLTATSASRVQASLLPQPLSVWGYRCLQESWGQLASMYVSTRERYKWLRFSEDCLYLNVY
                                                                                                                                                        146 APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
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Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
Khjavin, Ivar J.
Kno, Sophia S.
Napier, Mary A.
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Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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APPLICANT: Baker, Kevin P.
APPLICANT: Botstein, David
APPLICANT: Botsein, David
APPLICANT: Eaton, Dan
APPLICANT: Forrara, Napoleon
APPLICANT: Filvaroff, Ellen
APPLICANT: Fong, Sherman
APPLICANT: Gao, Wei-Qiang
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Gerritsen, Mary E.
Goddard, Audrey
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Godowski, Paul J.
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Gurney, Austin L.
Hillan, Kenneth J
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Publication No. US20030054405A1
GENERAL INFORMATION:
APPLICANT: Baker Kevin P.
APPLICANT: Baker Kevin P.
APPLICANT: Bottein, David
APPLICANT: Bettein, David
APPLICANT: Ferrara, Napoleon
APPLICANT: Filvaroff, Elen
APPLICANT: Fong, Sherman
APPLICANT: Fong, Sherman
APPLICANT: Gao, Wei-Oiang
APPLICANT: Gao, Wei-Oiang
APPLICANT: Gacher, Hanspeter
APPLICANT: Gerber, Hanspeter
APPLICANT: Gerber, Mary E.
APPLICANT: Gerber, Mary E.
             PRIOR APPLICATION NUMBER: 60/085700
PRIOR FILING DATE: 1998-05-15
PRIOR FILING DATE: 1998-05-15
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FILE OF INVENTION: Acids Encoding the Same CURRENT PELLOAD ACID: 2001-10-16
FILE OF INVENTION WHERE: 09/918385
PRIOR APPLICATION NUMBER: 09/918385
PRIOR PELLOAD DATE: 1997-10-17
PRIOR FILING DATE: 1997-10-17
PRIOR FILING DATE: 1997-11-13
PRIOR FILING DATE: 1997-11-13
PRIOR PELLOATION NUMBER: 06/06364
PRIOR PELLOATION NUMBER: 06/07450
PRIOR PELLOATION NUMBER: 06/077641
PRIOR PELLOAD DATE: 1998-03-11
PRIOR PELLOATION NUMBER: 06/077649
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PRIOR PELLOATION NUMBER: 06/0776936
Sequence 254, Application US/09981915A Publication No. US20030054986A1 GENERAL INFORMATION:
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Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
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PRIOR APPLICATION NUMBER: 60/078936
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Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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Ferrara, Napoleon
Filvaroff, Ellen
Fong, Sherman
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Goddard, Audrey
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APPLICANT: Baker Kevin P.
APPLICANT: Botstein, David
APPLICANT: Desnoyers, Luc
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Napier, Mary A.
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206 SHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHR 265
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                                                107 VGKTPIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGWSLALSPGWSAVARS
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                                                                                                                                                                                                                        146 APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
                                                                                                                                                                                                                                                    227 APARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDD
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           66 VGKTPIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPG
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Filvaroff, Ellen
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Gerber, Hanspeter
Gorritsen, Mary E.
Godwski, Paul J.
Crimaldi, J. Christopher
Gurney, Austin L.
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Kuo, Sophia S.
Napier, Mary A.
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APPLICANT: Baker Kevin P.
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APPLICANT: Baton, Dan
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PRIOR FILING DATE: 1998-04-27
PRIOR APPLICATION NUMBER: 60/083322
PRIOR PLING DATE: 1998-04-29
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Matches 399; Conservative 5; Mismatches 26; Indels 67;
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GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

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A54413	C39768	B69680	JC7990	H75522	S25062	S51043	866236	S47639	JE0150	F89068	T32053	A75250	T37254	A25363	AE0666
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cholinesterase (EC para nitrobenzyl e acetylcholinesterase) 622 para nitrobenzyl e acetylcholinesterase (A3 carboxylesterase) 643 carboxylesterase (acetylcholinestera acetylcholinestera acetylcholinestera protein T38Cl2-4b hypothetical prote carboxylesterase, acetylcholinesterase, acet	mallard  S-May-1995 #text_change 18- g of thioesterase B cDNA ar 3; PMID:8314791  00; PIDN:AAA49223.1; PID:9; erase homology	*; SCOTE 129.0.5; DE 27; DENGLE 37; Gaps 11; 106; Mismatches 172; Indels 27; Gaps 11; 111; Mismatches 172; Indels 27; Gaps 11; 111; Mismatches 172; Mismatch
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A; Molecule type: mRNA
A; Residues: 1-567 kMUN-
A; Cross-references: GB.N73499; NID:g179927; PIDN:AAA35649.1; PID:g179928
A; Notes references: GB.N3499; NID:g179927; PIDN:AAA35649.1; PID:g179928
A; Notes parts of this sequence, including the amino end of the mature protein, were conf:
R; Long, R.M.; Calabrese, M.R.; Martin, B.M.; Pohl, L.R.
A; Life Scil. 48, PL43-PL49, 1991
A; Pitle: Cloning and sequencing of a human liver carboxylesterase isoenzyme.
A; Reference number: JH0327; MUID:91148424; PMID:1997784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Residues: 1.3, PALV', 8-11, A', 13-567 <SHI>A;Cross-references: GB:D21088; NID:9455476; PIDN:BAA04650.1; PID:9458470
A;Note: sequence extracted from NCBI backbone (NCBIP:137630) and corrected to correspond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             carboxylesterase (EC 3.1.1.1) precursor, monocyte/macrophage [validated] - human NyAlternate names: carboxylesterase, hepatic; monocyte/macrophage serine esterase C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Accession: A41010; J40327; A4736; A48816; PS0220; IG1085; A48809; IS7004
R;Munger, J.S.; Shi, G.P.; Mark, E.A.; Chin, D.T.; Gerard, C.; Chapman, H.A.
J. Biol. Chem. 266, 18832-18838, 1991
A;Title: A serine esterase released by human alveolar macrophages is closely related A;Reference number: A41010; MUID:92011649; PMID:1918003
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A;Status: nucleic acid sequence not shown; not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Residues: 61-567 <LON>
A;Cross-references: GB:M55509; NID:g179929; PIDN:AAA35650.1; PID:g179930
A;Cross-references: GB:M55509; NID:g179929; FIDN:AAA35650.1; PID:g179930
GS:Shibata, F.; Takagi, Y.; Kitajima, M.; Kuroda, T.; Omura, T.
GROmics 17, 76-82, 1993
A;Title: Molecular cloning and characterization of a human carboxylesterase gene.
A;Reference number: A47376; MUID:94010913; PMID:8406473
                                                                                                                  PPLGSLRFAPPQPAEPWNFVKNTTSYPPMCSQDAVGGQVLSELFTNRKENIPLQFSEDC1 117
                                                                                                                                                                                                                                                    SPFLKDGASEBETNLSKAVMKYWANFARNGSPNGGGLPHWPEYDQKEGYLKIGASTQAAQ 535
                                                                                                                                                                                                                                                                                                                                                    201 LSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLAS 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLFHRAISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238 NLFHRAISESGVVLTSALITTDSKPIANLIATLSGCKTTTSAVMVHCLRQKTEDELLETS 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   321 NYMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWL 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            381 LPYIMKFPLNRQAMRKETITKALWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKALRNRM 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     441 MDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGI-IVKPRTDGADHGDEMYFLFG 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGM 559
6 LVW----LFLAACTAWGYPSSPPVVNTVKGKVLGKYVNLEGFAQ-----PVAVFLGIPFAK 57
                                                                                                                                                                                                                                                                                                                                                                                                                       178 FSTGDEHSRGNWGHLDOVAALHWVQDNIANFGGNPGSVTIFGESAGGFSVSALVLSPLAK
                                                                                                                                                                                                               141 YLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGF
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A;Residues: 1-3,'PALV',8-1
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A;Note: the sequence from Fig. 4 is inconsistent with that from Fig. 5 in having 265-Lys
R;Robbi, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X51974; NID:956898; PIDN:CAA36236.1; PID:956899
R;Morgan, E.W.; Yan, B.; Greenway, D.; Petersen, D.R.; Parkinson, A.
Arch. Blochem. Blochem. 135, 455-512, 1994
A;Title: Purification and characterization of two rat liver microsomal carboxylesterases
A;Reference number: S51202; MUID:95077430; PMID:7986098
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A,Residues: 19-26, 'D',28-37 <GAU>
C,Superfamily: cholinesterase; cholinesterase homology
C,Superfamily: carboxylic ester hydrolase; endoplasmic reticulum; glycoprotein; homotrimer
F,1-18/Domain: signal sequence #status predicted <SIG>
F,19-565/Product: carboxylesterase #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: protein
A; Residues: 19-48 <MOR>
B; Medda, S.; Proia, R.L.
Bichem. 206, 801-806, 1992
Bur. J Biochem. 205, 801-806, 1992
A; Title: The carboxylesterse family exhibits C-terminal sequence diversity reflecting A; Reference number: $23460; MUID: 92299008; PMID: 1606962
A; Accession: $23460
A; Status: preliminary; translation not shown
A; Molecule type: mRNA
A; Residues: 1-185, 'Q', 187-422, 'M', 424-505, 'N', 507-565 <MED>
                                                                                                                                                                                                                                                                                                                                                                                                                                                    carboxylesterase (EC 3.1.1.1) ES-10 precursor, microsomal - rat
carboxylesterase (EC 3.1.1.1) ES-10 precursor, microsomal - rat
carboxylesterase hydrolase A
c) Alternate names: hydrolase A
c) Species: Rattus norvegicus (Norway rat)
C; Date: 30-Jun-1991 #sequence revision 30-Jun-1991 #text_change 18-Jun-1999
C; Date: 30-Jun-1991 #sequence revision 30-Jun-1991
C; Date: 30-Jun-1991 #sequence revision 30-Jun-1991
R; Robbi, M.; Beaufay, H.; Octave, J.N.
Biochem. J. 269, 451-458, 1990
A; Title: Nucleotide sequence of cDNA coding for rat liver pI 6.1 esterase (ES-10), a chaccesion: S10367; MUID: 90351366; PMID: 2386485
A; Accession: S10367;
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                                                                                                                                                       GKPFLAGNATEEEAKLSKTVWKYWTNFARNGNPNGEGLVHWPQYDMDERYLEIDLTQKAA 528
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A;Residues: 1-185, (7,187-422, /M', 424-505, /N',507-565 <MED>
A;Cross-references: EMBL:X6226; NID:357553; PIDN:CAA46391.1; PID:957554
B;Gaustad, R.; Sletten, K.; Lovhaug, D.; Fonnum, F.
Biochem J. 274, 693-697, 1991
A;Title: Purification and characterization of carboxylesterases from rat lung. A;Reference number: S14361; MUID:91190080; PMID:2012599
                                                                                                               GGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVG 558
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   28 LCWSLTLCLMAQTALG-----ALHTKRPQVVTKYGTLQGKQMHVGKTPIQVFLGVPFSR
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F;79,489/Binding site: carbohydrate (Asn) (covalent) #status predicted
F;221,466/Active site: Ser, His #status predicted
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A, Reference number: $12468
A, Accession: $12468
                                                                                                                                                                                                                                                        559 MKLKEKKMAFWMSLYQSQRPEKQRQ 583
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A; Residues: 1-264,'K',266-565 <ROB2>
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A,Residues: 1-565 <ROB1>
A,Cross-references: EMBL:X51974
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Matches 240
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A;Accession: S19307
A;Accession: S19307
A;Noleule type: mRNA
A;Ross-references: EMBL:X63323; NID:g1930; PIDN:CAA44929.1; PID:g1931
A;Accession: S23607
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                439
                                                                                                                                                                                                 476
                                                                                                                                         498
                                                                                                                                                                                                                                                          GGPFATGLSMGKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLOLDFTTRVG 558
                                                                                                                                                                                                                                                                                                      140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS 320
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Carboxylesterase (EC 3.1.1.1) precursor - pig
NyAlternate names: proline-beta-naphthylamidase
Cispecies: Sus scrofa domestica (domestic pig)
Cispecies: O4-bec-1992 #sequence_revision 04-bec-1992 #text_change 18-Jun-1999
CiAccession: S19307; S23607
Rimatsushims, M.; Indue, H.; Ichinose, M.; Tsukada, S.; Miki, K.; Kurckawa, FEBS Lett. 293, 37-41, 1991
A;Title: The nucleotide and deduced amino acid sequences of porcine liver profice number: S19307; MUID:92070571; PMID:1959668
          LP-YIMKFPLNRQAMRKETITKMLWSTRTLLNITKBOVPLVVEEYLDNVNEHDWKMLRNR
                                              359 IPMQLMSYPLSEGQLDQKTAMSLLMKSYPLVCIAKELIPEATEKYLGGTD--DTVKKKDL
                                                                                                                                                                       MMDIVQDATFVYATLQTAHYHRDAGLPVXLYEFEHH-ARGIIVKPRTDGADHGDEMYFLF
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                                                                                                                                                                                                                                                                                                                                                                                         583
                                                                                                                                                                                                                                                                                                                                                                                                                                                     561
                                                                                                                                                                                                                                                                                                                                                                                      MKLKEKKWAFWMSLYQSQRPEKQRQ
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A;Residues: 114,'H',116-280,'A',282-300,'IGNSYLWTYRETQREST',318-336,'R',338-382,'GSPI',3
A;Cross-references: GB:M65261; NID:g187028; PIDN:AAA83932.1; PID:g187029
A;Experimental source: liver
A;Note: differences between this sequence and other reports appear to be due to frameshi
R;Kroetz, D.L.; McBride, O'W; Gonzalez, F.J.
B;choemistry 32, 1160e-11617, 1993
A;Title: Glycosylation-dependent activity of baculovirus-expressed human liver carboxyle
A;Reference number: A48809; MUID:94032283; PMID:8218228
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-55,'G',57-361,363-535,'G',537-567, <RRO!>
A;Cross-references: GB:L07765; NID:g180949; PIDN:AAA35711.1; PID:g180950
A;Cross-references: GB:L07765; NID:g180949; PIDN:AAA35711.1; PID:g180948
A;Residues: 1-17,'A', 18-55,'G',557-555,'G',537-567, <RRO?
A;Cross-references: GB:L07764; NID:g180947; PIDN:AAA16036.1; PID:g180948
                    Blood 78, 506-512, 1991

A;Title: cDNA cloning and characterization of human monocyte/macrophage serine esterase—A;Title: cDNA cloning and characterization of human monocyte/macrophage serine esterase—A;Acefession: A49816, MUID:9130111; PMID:2070086

A;Acefession: A49816

A;Molecule type: mRNA
A;Molecule type: mRNA
A;Kesidues: 'G', 65-185, 'G', 187-361, 363-567 <ZSC>
A;Cross-references: GB:X52973; NID:936421; PIDN:CAA37147.1; PID:91335304

B;Riddles, P.W.; Richards, L.J.; Bowles, M.R.; Pond, S.M.
A;Title: Cloning and analysis of a cDNA encoding a human liver carboxylesterase.
A;Reference number: P$0280; MUID:92084150; PMID:1748313
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      M.R.; Radzun,
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A;Cross-references: GDB:128044; OMIM:114835
A;Cross-references: GDB:128044; OMIM:114835
A;Map position: 16q13-16q22.1
A;Map position: 16q13-16q22.1
C;Superfamily: cholinesterase; cholinesterase homology
C;Superfamily: carboxylic ester hydrolase; endoplasmic reticulum; liver
F;19-145/Domain: propeptide #status predicted <PRO>
F;50-553/Domain: cholinesterase homology <CHE>
F;146-567/Product: carboxylesterase #status experimental <MAT>
F;56-567/Region: endoplasmic reticulum retention signal #status atypical
F;221,468/Active site: Ser, His #status predicted
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   F.; Parwaresch,
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н.;
Salmassi, A.; Kreipe,
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Best Local
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358

LPYIMKEPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRM 440

LKMKFLTLDFHGDQRESHPFLPTVVDGVLLPKMPEEILAEKDFNTVPYIVGINKQEFGWL

299 381

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		Db 356 GWILPTMMNYPPSDVKLDQMTAMSLÍKKSSFLÍNLPEDAIAVAIEKYLRDKDYTGRN 412
Db 359 LPTMMGPPLSEGKLDQKTATSLLWKSYPIANIPEELTPVATDKYLGGTDDPVKKKDLF 416  441 MDIVQDATFVYATLQTAHYHRDAGLPVYLYEEHH-ARGIIVKPRTDGADHGDEMYFLEG 499  1   I	REBULT 5  Order: 8.  O	QY 324 RFLQLNFQRDFEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPY 383

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Sarboxylesterase (BC 3.1.1.1) ES-4 precursor, liver - rat
Carboxylesterase (BC 3.1.1.1) ES-4 precursor, liver - rat
Nilterate names: hydrolase B
C.Species Rattus norregious (Norway rat)
C.Date: 28-Oct: 1996 #sequence revision 13-Mar-1997 #text_change 18-Jun-1999
C.Accession: S6788; S51203; Ä55304; 54927
B.Robbi, M.; van Schaftingen. E.; Beaulay, H.
Biochem. U. 313, 821-826, 1956
A.Fittle: Cloning and sequencing of rat liver carboxylesterase ES-4 (microsomal palmitoy)
A.Roccession: S6788
A.Molecule type: mRNA
A.Roccession: S6788
A.Molecule type: mRNA
A.Roccession: S6788
A.Molecule type: mRNA
A.Roccession: S6788
A.Molecule type: mRNA
A.Roccession: S5703
A.Molecule type: mRNA
A.Roccession: S5103
A.Molecule type: mRNA
A.Roccession: S5103
A.Molecule type: mRNA
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A.Molecule type: mRNA
A.Roccession: S5103
A.Molecule type: mRNA
A.Roccession: S5103
A.Molecule type: mRNA
A.Roccession: S6504
A.Title: Rat Kidney carboxylesterase. Cloning, sequencing, cellular localization, and raticles the mumber: A5504; MUD:9502019; PMID:7961958
A.Molecule type: mRNA
A.Roccession: S6504
A.Molecule type: mRNA
A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Roccession: A.Rocc
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                                  476 APILRDGASEBEIKLSKAVMKFWANFARNGNPNARGLPHWPQYDQKESYLQIGATTQQSQ 535
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                                                                                                                 GPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGM
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A,Molecule type: mRNA
A,Residues: 1-561 <RO2>
A,Cross_references: EMBL:X81825; NID:g550417; PIDN:CAA57419.1; PID:g550418
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F;221,466/Active site: Ser, His #status predicted
F;301/Binding site: carbohydrate (Asn) (covalent) #status predicted
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Pred. No. 5.6e-88;
3; Mismatches 191; Indels 13;
                                                                                                                                                                                                                                   KLKEKKMAFWMSLYQSQRPE 579
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536 RLKAEEVAFWTQLLAKRQPQ 555
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Best Local Similarity 41.7%; Promatches 234; Conservative 123;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C.Species: Rattus norvegicus (Norway rat)
C.Date: 19-Mar-1998 #sequence_revision 17-Apr-1998 #text_change 13-Sep-1998
C.Date: 19-Mar-1998 #sequence_revision 17-Apr-1998 #text_change 13-Sep-1998
C.Accession: S71597
Arch. Biochem. Biophys. 317, 222-234, 1995
A.Title: Cloning and expression of hydrolase C, a member of the rat carboxylesterase in A.Feference number: S71597; MUID:95177656; PMID:7872788
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                                                        PLFGGPFATGLSMGKEKALSLQWMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTT
                                                                                                                                                                                SVFGAPILRGGTSEEBINLSKWMMKFWANFARNGNPNGQGLPHWPEYDQKEGYLQIGATT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82 PPLGILRFAPPEPPEPWKGIRDATTYPPGCLQESW-GQLASMYVSTRERYKWLRFSEDCL
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38.2%; Score 1187.5; DB 2; Length
Best Local Similarity 41.1%; Pred. No. 3.2e-88;
Matches 230; Conservative 123; Mismatches 196; Indels
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A,Residues: 1-561 <YAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   carboxylesterase (EC 3.1.1.1) precursor, liver - N,Alternate names: hydrolase C
                                                                                                                                                                                                                                                         RVGMKLKEKKMAFWMSLY-QSQRPEKQRQ 583
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282 NPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPEBIIWSM 341
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||KLKGEEVAFWTELLAKNPPQTE
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Best Local Similarity
Matches 237; Conserv
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Carboxylesterase (EC 3.1.1.1) El precursor, minor form - rat

Cispecies: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 21-Aug-1998

Cipace 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 21-Aug-1998

Cipacession: JX0054

RiTakagi, Y.; Morohashi, K.; Kawabata, S.; Go, M.; Omura, T.

J. Biochem. 104, 801-806, 1988

A;Title: Molecular cloning and nucleotide sequence of cDNA of microsomal carboxyesterase

A;Recerence number: JX0054; MUID:89174514; PMID:3235453

A;Accession: JX0054

A;Recerence number: Jayoure: liver

C;Superfamily: cholinesterase; cholinesterase homology

C;Reynods: carboxylesterase El #status predicted <SIG>

F;118/Domain: signal sequence #status predicted <SIG>

F;118/Domain: signal sequence #status predicted <AIGS

F;30-53/Domain: cholinesterase El #status predicted <AIGS

F;30-23/Domain: cholinesterase Polyourate (Asn) (covalent) #status predicted

F;721,453/Active site: Ser, His #status predicted
              117
                                        200
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261 GLFHRAISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS
                                                                                                                                                                                                               26 WI--LCW-SLTLCLM--AQTALGALHTKRPQVVTKYGTLQGKQMHVGKTPIQVFLGVPFS
                                                                                           LSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLAS
                                                                                                                                                                                                 321 NKMRFLQLNFQRDPEBIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWL
                                                                                                                                                                                                                                                    LPYIMKE-PLNRQAMRKETITKMLWSTRTLLNITKBOVPLVVEEYLDNVNEHDWKMLRNR
                                                                                                                                                                                                                                                                                                       MMDIVQDATFVYATLQTAHYHRDAGLPVYLYBFEHH-ARGIIVKPRTDGADHGDEMYFLF
                                                                                                                                                                                                                                                                                                                               415 ILAFIGDVSFSIPSVMVSRDHRDAGAPTYMYEYQYYPSFSSPQRPKHVVGDHADDLYSVF
                                        YLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37.3%; Score 1159.5; DB 2;
42.6%; Pred. No. 5.8e-86;
tive 104; Mismatches 192; 1
                                                                                                                                                                                                                                                                                                                                                                                                               MKLKEKKMAFWMSLYQSQRPE 579
                                                                                                                                                                                                                                                                                                                                                                                                                                SELKAEEVAFWIQLLAKRQPQ 555
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Conservative 1
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multige A,Accession: A31584
A,Molecule type: mRNA
A,Rosidues: 1-540 < LONA
A,Rosidues: 1-540 < LONA
A,Cross-references: GB:M20629, GB:X13587; NID:g203279, PIDN:AAA40871.1; PID:g203280
C,Superfamily: cholinesterase; cholinesterase homology
C,Keywords: carboxylic ester hydrolase; glycoprotein
F;1-9/Domain: signal sequence #status predicted <SIG>F;10-540/Product: carboxylesterase #status predicted <MAT>
F;10-529/Domain: cholinesterase homology <CHE>
F;70.255,266,293,366,467/Binding site: carboxydrate (Asn) (covalent) #status predicted
F;212,444/Active site: Ser, His #status predicted ಗ Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cipace: 21.may-1990 #sequence\_revision 03-Aug-1992 #text\_change 18-Jun-1999
Cipacession: A1584
Ricong, R.M.; Satoh, H.; Martin, B.M.; Kimura, S.; Gonzalez, F.J.; Pohl, L.R.
Biochem: Blophya, Res. Commun. 156, 866-873, 1988
A;Title: Rat liver carboxylesteraes: CDNA choning, sequencing, and evidence for A;Reference number: A31584; MUID:89050119; PMID:2973315 œ 102 161 221 281 319 SNKWRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLBFNW 379 380 LLPYIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNR 439 498 461 SGLFHRAISOSGTALFRIFITSNPLKVAKKVAHLAGCNHNSTOILVNCLRALSGTKVMRV GGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVG 46 HTKRPQVV-TKYGTLQGKQMHV-GKT-PIQVFLGVPFSRPPLGILRFAPPEPPEPWKGIR 10 HPSSPPVVDTTKGKVLGKYVSLEGFTQPVAVFLGVPFAKPPLGSLRFAPPBPAEPWSFVK 162 FPGGAFIVGAASSYEGSDLAAREKVVLVFLOHRLGIFGFLSTDDSHARGNWGLLDOMAAL RWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRLFITS LFSTGDEHSRGNWAHLDQLAALRWVQDNIANFGGNPDSVTIFGESAGGVSVSALVLSPLA 103 DATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDCLYLNVYAPARAPGDPQLPVMVW 440 MMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGII-VKPRTDGADHGDEMYFLF 100 FLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLA Gaps 20; 540; 36.9%; Score 1149; DB 2; Length 5443.8%; Pred. No. 4e-85; cive 96; Mismatches 188; Indels

	M 296	qq	
Oy 342 SPUVDGVVIPDDPLVLLTQGKVSSVBYLLGVNNLEFNWLLPYIMKFPLNRQAMRKETITK .	K 401 S 356	cy QQ	440 MMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGIIVK-PRTDGADHGDEMYFLF 498 :: :
OY 402 MLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWRMLRNRMDIVQDATFVYATLGTAHYHR OD 357 FLKRESPNLNISESVIPAIIBKYLRGTDDPAKKKELLLDMFSDVFFGIPAVLMSRSLR OD	R 461 	ò q	499 GGPPATGLSMGKEKALSLOMMKYWANPARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVG 558 
QY 462 DAGLPUYLYEFEHHARGII-VKPRTDGADHGDEMYFLFGGPPATGLSMGKEKALSLQMMK :	K 520   K 474	, & 43	559   MKLKEKKWAFWMSLYQSQRPE
QY 521 YWANPARTGNPUDGNLPCWPRYNKDEKYLQLDFTTRVGMKLKEKKOMAFWMSLYQSQRPEK :	580	RESULT 12	
581 Q 581		carboxyle C;Species C;Date: 0	sterase (EC 3.1.1.1), TCCD-induced 60K microsomal - rabbit : Oryctolagus cuniculus (domestic rabbit) 8-Dec-1988 #sequence_revision 08-Dec-1988 #text_change 21-Aug-1998
Þ		C, Accessi R, Korza, J. Biol. A, Title:	on: A29923; A29471 G.; Ozols, J. Chem. 263, 3486-3495, 1988 Complete covalent structure of 60-kDa esterase isolated from 2,3,7,8-tetrachlo:
A39060 carboxylesterase (EC 3.1.1.1) precursor - mouse C;Species: Mus musculus (house mouse) C;Date: 06-Mar-1992 #sequence_revision 06-Mar-1992 #text change 18-Jun-1999	თ	A, Referen A, Accessi A, Molecul A, Residue	ce number: A29923; MUID:88139431; PMID:3343253 on: A29823 e type: protein s: 1-539 <kor></kor>
: A39060 . Tepperman, K.; Medda, S.; Elliott, R.W.; Stephenson, D.A.; 344-354, 19901 aracterization of a murine cDNA encoding a member of the cark number: A39060; MUID:91169540; PMID:1840565	t, S.G.; Gar esterase mul	R,OZOIS, J. Biol. A,Title: A,Referen	J. Chem. 262, 15316-15321, 1987 Isolation and characterization of a 60-kilodalton glycoprotein esterase from l. e number: A29471; MUID:88033124; PMID:3667634
PIDN:AAA6 se homolog		A; Molecul A; Residue C; Superfa C; Keyword F; 32-526/ F; 61, 363/	A;Molecule type: protein A;Residues: 1-71,193-208,446,532-539 <020> C;Superfamily: cholinesterase; cholinesterase homology C;Keywords: carboxylic ester hydrolase; endoplasmic reticulum; glycoprotein F;32-526/Domain: cholinesterase homology <che> F;61.363/Binding site: carbohydrate (Asn) (covalent) #status experimental F;195,441/Active site: Ser, His #status experimental</che>
F;20-540/Domain: cholinesterase homology <che> F;221,455/Active site: Ser. His #status predicted Ser. Mis #status predicted Ser. First Ser. His #status predicted Ser. First Ser. His #status Ser. His #status Predicted</che>		Query Match Best Local Matches 22	Query Match Best Local Similarity 41.3%; Pred. No. 8e-84; Matches 227; Conservative 115; Mismatches 177; Indels 30; Gaps 10;
Ę.,	10;	ò	46 HTKRPQVVTKYGTLQGKQMHVGKTPIQVFLGVPFSRPPLGILRFAPPEPPEP 97
Qy 26 WILCW-SLTLC-LMAQTAL-GALHTKRPQVVTKYGTLQGKQMHVGKTPIQVFLGVPFS (	S 80 : A 56	op Oy	1 HPSAPPVVDIVKGKVLGKFVSLEGFAQPVFLGVPFAKPPLGSLRFAPPQPAES 55 98 WKGIRDATTYPPGCLQESWGQLASMYVSTREXYKWLRFSEDCLYLNVYAPARAPGDPQ 155
81 RPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDC	υ <b>—</b>	QQ	:::  :      :
EDC:	C 116 G 199	S S	156 LPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDDSHARGNWGLL 215
	G 176 A 259	දුරු අධ	216 DQWAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHRAISQSGTALF 275 
DD 177 LFSTGDEHSPGNWAHLDQLAALRWVQDNIANFGGNPDSVTIFGESSGGISVSVLVLSPLG ON SECONDSTANDEN SECONDS S		ઠે ઇ	RIFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPE 33
237 KDLFHRAISESGVVITTNVGKKNIQAVNEITATLSQCNDTSSAANVQCLRQKTESELLEI	1 296 1 296	g &	227 SSLFKNIKSLABKIAIBAGCKIIISAVMVHCLKKRIBEBELMEVILKMKFMALDLVGUFK 286 336 EIIWSMSPYVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLP-YIMKFPLNRQAM 394
320 SNKMRPLQLNPQRDPEBIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEPNW		qa	4
	R 345 R 439	දු දු	395 RKETITKALMSTRTLLNITKEQVPLVVEBYLDNVNBHDWKALRNRMMDIVQDATFVYATL 454 347 DQKTATBILMKSYPIVNVSKELTPVATEXYLGGTDDPVKKKDLFLDMLADLLFGVPSV 404

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RESULT 14
847655
carboxylesterase (EC 3.1.1.1) precursor - golden hamster
C;Species: Mesocricetus auratus (golden hamster)
C;Species: Mesocricetus auratus (golden hamster)
C;Species: Mesocricetus auratus (golden hamster)
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C;Superfamily: cholinesterase; cholinesterase homology
C;Keywords: carboxylic ester hydrolase
C;Superfamily: cholinesterase homology cHE>
F;SB-546/Domain: cholinesterase homology
C;Keywords: carboxylic ester hydrolase
F;SB-546/Domain: cholinesterase homology cHE>
F;227,459/Active site: Ser, His #status predicted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
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CLYLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIF 198
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84 LGILRFAPPEPPEPWKGIRDATTYPPGCLQESW--GQLASMYVSTRER---YKWLRFSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           259 ASGLEHRAISQSGTALFRIFITSNPLKY-AKKVAHLAGCNHNSTOILVNCLRALSGTKVM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242 SKGLFHGAIMQSGVALLPDLISDTPEAVYTPVVANQSGCEAKDSEALVHCLREKTEAEIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  346 CGWGVPLFMGLDHVIRNITRETLPAFLKSRAEHWMLPPECSDLLMQBYMGDV--EDPQTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGI----IVKPRTDGADHGDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CWSLTLCLMAQTALGALH ---TKRPQVVTKYGTLQGKQMHV--GKTPIQVFLGVPFSRPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             377 FNWLLPYIMKFPLNRQAMRKETITIONLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKML
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
34.1%; Score 1060; DB 2; Length 56
Best Local Similarity 41.1%; Pred. No. 7.1e-78;
Matches 234; Conservative 97; Mismatches 191; Indels
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Aprille: Molecular cloning and characterization of a novel putative carboxylesterase, pragetimes: Tibesime and Spieces: GB: Y09616; NID: 92058317; PIDN: CAA70831.1; PID: 92058318
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Cicement: This enzyme hydrolyzes many xenobiotics, such as carboxyl esters
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F: 228, 457/Active site: Ser, His #status predicted
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                                     QTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDEMYFLFGGPFATGLSMGKEKA
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carboxylesterase (EC 3.1.1.1) - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Accession: S34607
R;Aida, K.; Moore, R.; Negishi, M.
Biochim. Biophys. Acta 114, 72-74, 1993
A;Title: Cloning and nucleotide sequence of a novel, male-predominant carboxylesterase in A;Reference number: S34607; MUID:93326638; PMID:7916639
A;Tatus: S34607
A;Stetus: Dreliminary
A;Molecule type: mRNA
A;Stetus: 1-554 AMD>
A;Cross-references: GB:S64130; NID:9404388; PIDN:AAB27606.1; PID:9404389
C;Superfamily: cholinesterase; cholinesterase homology
C;Keywords: carboxylic ester hydrolase
F;46-536/Domain: cholinesterase homology cCHE>
F;215,443/Active site: Ser, His #status predicted
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Search completed: August 3, 2004, 22:28:52 Job time : 23 secs

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OM protein - protein search, using sw model

August 3, 2004, 22:24:36; Search time 13 Seconds (without alignments) 2339.152 Million cell updates/sec Run on:

US-10-001-227-2 3112 1 MPSTVLPSTVLPSLLPTAGA.......KWAFWMSLYQSQRPEKQRQF 584 Title: Perfect score: Sequence:

141681 seqs, 52070155 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table: Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_42:\* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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## ALIGNMENTS

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STRAIN=Sprague-Dawley, and Wistar; TISSUE=Liver;
STRAIN=Sprague-Dawley, and Wistar; TISSUE=Liver;
MEDIJINE=90351366; PubMed=2386485;
Robbi M., Beaufay H., Octave J.-N.;
"Nuclectide sequence of cDNA coding for rat liver pI 6.1 esterase
(ES-10), a carboxylesterase located in the lumen of the endoplasmic
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P16303; O64574;
P16303; O64674;
O1-AVG-1990 (Rel. 15, Last sequence update)
O1-AVG-1999 (Rel. 38, Last annotation update)
I5-JUL-1999 (Rel. 38, Last annotation update)
Liver carboxylesterase 10 precursor (EC 3.1.1.1) (Carboxyesterase 10) (PI 6.1 esterase)
  476 476 N-LINKED (GLCNAC. . .) (POTENTIAL) 557 AA, 61637 MW, 03E35D90A037F6B0 CRC64;
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46.0%; Pred. No. 4.8e-95;
tive 106; Mismatches 172; Indels
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Medda S., Proia R.L.;
"The carboxylesterase family exhibits C-terminal sequence diversity
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WH; F973AF2A7ICCIF84 CRC64;
                                                                                                                                                                                                                                                                                                                                                      carboxylic anion.
-!- SUBUNIT: Homotrimer.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
-!- SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28 LCWSLTLCLMAQTALG----ALHTKRPQVVTKYGTLQGKQMHVGKTPIQVFLGVPFSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 LVW----ELAACTAWGYPSSPPVVNTVKGKVLGKYVNLEGFAQ-----PVAVFLGIPPAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58 PPLGSLRFAPPQPAEPWNFVKNTTSYPPMCSQDAVGGQVLSELFTNRKENIPLQFSEDCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141 YLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGF
                                                                                                                                                                                                                                                                     Biochim. Biophys. Acta 1259:305-312(1995).
-!- FUNCTION: PROBABLY INVOLVED IN THE METABOLISM OF XENOBIOTICS AND
OF NATURAL SUBSTRATES.
                                                                                                                                                                                                Ghosh S., Mallonee D.H., Hylemon P.B., Grogan W.M.,
                                                                                                                                                                                                                                                                                                                                     -!- CATALYTIC ACTIVITY: A carboxylic ester + H(2)0 = an alcohol + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interpro; IPR002018; CarbesteraseB.
Interpro; IPR00319; Ser estra.
Pfam; PF00112; COSEterase; 1.
PR0SITE; PS00122; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00411, CARBOXYLESTERASE B 2; 1.
Hydrolase; Serine esterase; Glycoprofein; Endoplasmic reticulum; Signal; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40.5%; Score 1259; DB 1
43.0%; Pred. No. 1.6e-92
                                                                                       Eur. J. Biochem. 206:801-806(1992).
                                                                                                                                                        STRAIN=Sprague-Dawley, TISSUE=Liv
MEDLINE=96130267; PubMed=8541339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; X51974; CAA36236.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; X65296; CAA46391.1; -.
EMBL; L46791; AAA88507.1; -.
HSSP; P21836; 1MAA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity ...
hes 241; Conservative
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VARIANT
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                                                                                              298 LKLNLFKLDLLGNPKESYPFLPTVIDGVVLPKTPEEILAEKSFNTVPYIVGINKQEFGWI 357
                                                                                                                    LPYIMKPPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRM 440
                                                                                                                                                                                       GPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGM 559
                                                                                                                                                                                                     476 SPFLKDGASEBETNLSKOVVMKYWANFARNGSPNGGGLPHWPBYDQKEGYLKIGASTQAAQ 535
118 YLNVYTPADLTKNSRLPVMYWIHGGGLVVGGASTYDGQVLSAHENVVVVTIQYRLGIWGF 177
                           178 FSTGDEHSRGNWGHLDQVAALHWVQDNIANPGGNPGSVTIFGESAGGFSVSALVLSPLAK
                                                            238 NLFHRAISESGVVLTSALITTDSKPIAKLIATLSGCKTTTSAVMVHCLRQKTEDELLETS
                                                                                   NKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWL
                                                                                                                              201 LSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDFGNVTLFGQSAGAMSISGLMMSPLAS
                                                 GLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS
                                                                                                                                                    441 MDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGI-IVKPRTDGADHGDEMYFLFG
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TISSUE=Peripheral blood, and Placenta;
MEDLINE=94010913; PubMed=8406473;
Shibata F., Takagi Y., Kitajima M., Kuroda T., Omura T.;
"Molecular cloning and characterization of a human carboxylesterase
                                                                                                                                                                                                                                                                               "Glycosylation-dependent activity of baculovirus-expressed human liver carboxylesterases: cDNA cloning and characterization of two
                                                                                                                                                                                                                                                                                                                                                                                                                                     "A serine esterase released by human alveolar macrophages is related to liver microsomal carboxylesterases."; 
J. Biol. Chem. 266:18832-18838 (1991).
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE=22011649; PubMed=1918003;
Munger J.S., Shi G.P., Mark E.A., Chin D.T., Gerard C.,
Chapman H.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gonzalez F.J.;
                                                                                                                                                                                                                                  KLKEKKMAFWMSLYQSQRPEK 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          highly similar enzyme forms.";
Biochemistry 32:11606-11617(1993).
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MEDLINE-94032283; PubMed-8218228;
Kroetz D.L., McBride O.W., Gonzal
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SEQUENCE FROM N.A.
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its muse by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                      LPHRAISQSGTALFRLFITSNPLK-VAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS 320
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                                                    321 NYMRFLQLNFQRDPEFIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWL
                                                                                                                                                                                                                                                                                                           440 MMDIVQDATFVYATLQTAHYHRDAGLPVYLYBFEHH-ARGIIVKPRTDGADHGDEMYFLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carboxylesterase.";
FEBS Lett. 293:37-41(1991).
FEBS Lett. 293:37-41(1991).
-!- FUNCTION: Involved in the detoxification of xenobiotics and in the activation of ester and amide prodrugs.
-!- CATALYTIC ACTIVITY: A carboxylic ester + H(2)0 = an alcohol + a carboxylic anion.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
-!- SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
                                                                                                                                                                 299 LYWKFLSLDLQGDPRESQPLLGTVIDGMLLLKTPEELQAERNFHTVPYMVGINKQEFGWL
                                                                                                                                                                                                              LP-YIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNR
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Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae, Sus.
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HSSP, P21836; 1MAH.

InterPro; IPRO00379; Ser_estrs.

Pfam; PF00135; COesterase; 1.

PROSITE; PS00041; CARBOXVLESTERASE B_1; 1.

PROSITE; PS00041; CARBOXVLESTERASE B_2; 1.

Glycoprotein; Hydrolase; Serine esferase; Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proline-beta-naphthylamidase. Evidence for the identity with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Liver carboxylesterase precursor (EC 3.1.1.1) (Proline-beta-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matsushima M., Inoue H., Ichinose M., Tsukada S., Miki K.,
Kurokawa K., Takahashi T., Takahashi K.;
"The nucleotide and deduced amino acid sequences of porcir
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   559 MKLKEKKMAFWMSLYQSQRPEKQRQ 583
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Sus scrofa (Pig)
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Q29550;
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PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00941; CARBOXYLESTERASE B 2; 1.
Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum; Signal; Multigene family; Polymorphism.
SIGNAL BY SIMILARITY.
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SIMILARITY)
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A -> WA (IN REF. 2).

A -> G (IN REF. 2).

R -> G (IN REF. 2).

R -> G (IN REF. 2).

N -> A (IN REF. 9).

N -> A (IN REF. 9).

N -> A (IN REF. 9).

N -> A (IN REF. 8).

A -> R (IN REF. 8).

A -> R (IN REF. 8).

A -> R (IN REF. 8).

A -> R (IN REF. 8).

A -> R (IN REF. 8).

F -> I (IN REF. 8).

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E -> K (IN REF. 8).

E -> K (IN REF. 8).

E -> D (IN REF. 8).

E -> D (IN REF. 8).

E -> D (IN REF. 8).
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S -> N (in dbSNP:2307240).

/FTId=VAR 014314.

R -> H (in dbSNP:2307243).

/FTId=VAR 014594.

D -> E (in dbSNP:2307227).
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PREVENT SECRETION FROM ER
N-LINKED (GLCNAC. . .) (PO
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/FTId=VAR_002358.
RAFI -> PALV (IN REF. 3).
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                                                                                     PIR; A41010; A41010.

HSSP; P21836; 1MAH.
Genew; HGMC:1863; CES1.
MIM; 114835; -..
GO; GO:0004759; F:serine esterase activity; TAS.
GO; GO:0009152; P:metabolism; TAS.
GO; GO:0009358; P:response to toxin; TAS.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR000379; Ser_estrs.
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62521 MW;
                 EMBL; M55509; AAA35650.1;
EMBL; X52973; CAA37147.1;
EMBL; M65261; AAA83932.1;
EMBL; S73751; AAC60631.2;
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                                                                                                                                                                                                                                             LSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLAS 260
                                                                                                                                                                                                                                                                                GLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS 320
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                                                                                                                                                                                                                                                                                                                                                                 GPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGM 559
                                                                                                                                                                      PLGILRFAPPEPPEPWKGIRDATTYPPGCLQESWGQ--LASMYVSTRERYKWLRFSEDCL 140
                                                                                                                                                                                                                                                                                                                                                                                                          LDLMGDVVPGVPSVTVARQHRDAGAPTYMYERQYRPSFSSDKKPKTVIGDHGDEIFSVFG 476
                                                                                                                                   82
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                                                                                                                                                                                                                                                       FSTGDEHSRGNWGHLDQVAALHWVQENIANFGGDPGSVTIFGESAGGESVSVLVLSPLAK
                                                                                                                                                                                                                                                                                                                   NKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWL
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                                                                                                                                                                                                                                                                                           WLL--PLVLTSLASSATWAGQPASPPVVDTAQGRVLGKYVSLEGLAQPVAVFLGVPFAKP
                                                                                                                                                                                                        YLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYBGSDLAAREKVVLVFLQHRLGIFGF
      BY SIMILARITY.

LIVER CARBOXYLESTERASE.

CHARGE RELAY SYSTEM (BY SIMILARITY).

CHARGE RELAY SYSTEM (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

PREVENT SECRETION FROM BR (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).

W, BE046545307DEDES CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 41, Last annotation update)
Liver carboxylesterase 3 precursor (EC 3.1.1.1) (Carboxyesterase (pI 5.5 esterase) (ES-HTEL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                 11;
                                                                                                Length
                                                                                                                 Mismatches 192; Indels
                                                                                                 DB 1;
                                                                                                Score 1239.5; DB Pred. No. 5.6e-91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               561 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KLKEKKMAFWMSLYQSQRPEK 580
                                                                                                                 Conservative 110;
                                                                              62016 MW;
                                                                                               39.88;
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                 566
222
467
1117
585
566
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                                 467
88
274
563
80
566 AA;
                                                                                                         Similarity
Signal; Multigene
SIGNAL 1
                                                                                                                 Matches 248;
                        ACT_SITE
ACT_SITE
DISULFID
DISULFID
                                                             SITE
                                                                                          Query Mac.
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its work by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
Robbi M., Beaufay H.;
"Cloning and sequencing of rat liver carboxylesterase ES-3 (egasyn).",
Biochem. Biophys. Res. Commun. 203:1404-1411(1994).
-!- FUNTION: Involved in the detoxification of xenobiotics and in the
activation of ester and amide prodrugs.
-!- CATALYTIC ACTIVITY: A carboxylic ester + H(2)O = an alcohol + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241 HKAISESGVALTAGLVKKNTRPLAEKIAVVSGCKSTTSASMVHCLRQKTEEBLLETTLKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GILRFAPPEPPEPWKGIRDATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDCLYLN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LC-WSLTLCLMAQTALGALHTKRPQVVTKYGTLQGKQMHV-GKT-PIQVFLGVPFSRPPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLST
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY.

LIVER CARBOXYLESTERASE 3.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SERENTY SCRETION FROM BR (POTENTIAL).

N-LINKED (GLONAC. ..) (POTENTIAL).

N-LINKED (GLONAC. ..) (POTENTIAL).

N-LINKED (GLONAC. ..) (POTENTIAL).

M: 1E14D66DF089B86F CRC64;
                                                                                                                                                                                       SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
                                                                                                                                             -!- SUBCELLULAR LOCATION: Microsomal membrane, lumen of endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; JC2447; JC2447.
HSSP; P21836; IMAA.
InterPro; IPRO02018; CarbesteraseB.
InterPro; IPRO03019; Ser_estrs.
Pfam; PF00135; COesterase; 1.
PRO1125; CARBOXVIESTERASE B 1; 1.
PRO51TE; PS00941; CARBOXVIESTERASE B 2; 1.
Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38.7%; Score 1205.5; DB 1; Length 43.3%; Pred. No. 2.9e-88; ive 114; Mismatches 191; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X81395; CAA57158.1; -. PIR; JC2447; JC2447.
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1116
284
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CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL
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61581 MW; FB1A4367A0CCB2E3 CRC64;
                                                  38.7%;
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     562 AA;
                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                  Query Match
Best Local S:
Matches 241
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                                                                                                                                                        538
     VQDATFVYATLQTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDEMYFLFGGPF 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.

MEDLINE=92147141; PubMed=1783403;

Ovnic M., Swank R.T., Fletcher C., Zhen L., Novak E.K., Baumann H.,

Heintz N., Ganschow R.E.;

"Characterization and functional expression of a cDNA encoding egasyn

"Characterization and functional expression of a cDNA encoding egasyn

"Characterization and functional expression of a cDNA encoding egasyn

"Characterization and functional expression of a cDNA encoding egasyn

"Characterization and functional expression of a cDNA encoding egasyn

Genomics 11:956-967(1991).

"FORTION: Involved in the detoxification of xenobiotics and in the

activation of ester and amide prodrugs.

"CATALYTIC ACTIVITY: A carboxylic ester + H(2)0 = an alcohol + a
                                                                                                                                     IGDVIFGVPSVIVSRGHRDAGARTYMYERQYRPSFSSKMKPSTVVGDHGDEIYSVFGAPI
                                                                                                     ATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGMKLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: Microsomal membrane, lumen of endoplasmic
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI_TaxID=10090;
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1-NOV-1997 (Rel. 35, Last sequence update)
28-FBS-2003 (Rel. 41, Last annotation update)
Liver carboxylesterase 22 precursor (RC 3.1.1.1) (Egasyn)
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LIVER CARBOXYLESTERASE 22
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PREVENT SECRETION FROM EF
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PIR; A55281; A55281.
HSSP; P21836; 1MAH.
MGI, 19542; E522.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00379; Ser_estrs.
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                                                                                                                     78
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MEDLINE=95050813; PubMed=7961958;
MEDLINE=95050813; PubMed=7961958;
MEDLINE=95050813; PubMed=7961958;
MEDLINE=950508199; Parkinson A.;
"Rat kidney carboxylesterase. Cloning, sequencing, cellular localization, and relationship to rat liver hydrolase.";
Joshization, and relationship to rat liver hydrolase.";
J. Biol. Chem. 269:29688-2969(1994).
-- FUNCTION: Involved in the detoxification of xenobiotics and in the
                                                                                                                                                                                                                                           79 FSRPPLGILRFAPPEPPEPWKGIRDATTYPPGCLOES-WGOLASMYVSTRERYKWLRFSE
                                                                                                                                                                        1 MCLSALILVSLAAFTAGAGHPSSPPMV---DTVQGKVL--GKYISLEGFTQPVAVFLGVP
                                                                                                                     ----TPIQVFLGVP
                                                                                                                                                                                                                                                                                                                                                                                                             116 DCLYLNIYTPADLTKSDRLPVWWIHGGGLVLGGASTYDGLVLSTHENVVVVVIQYRLGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FGFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318 RVSNKMRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                296 GTTLKINLFKLDLHGDSRQSHPFVPTVLDGVLLPKMPEEILAEKNFNTVPYIVGINKQEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NWLLPYIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWK-ML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYBFEHH-ARGIIVKPRTDGADHGDEMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  496 FLFGGPFATGLSMGKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SVPGAPILRGGTSEBEINLSKAMMKFWANFARNGNPNGQGLPHWPEYDQKEGYLQIGATT
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                                                         Gaps
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
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01-NOV-1997 (Rel. 35, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Liver carboxylesterase B-1 precursor (EC 3.1.1.1) (Liver microsomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           activation of ester and amide prodrugs.
-!- CATALTIC ACTIVITY: A carboxylic ester + H(2)O = an alcohol + a carboxylic anion.
-!- SUBCELLUTAR LOCATION: Microsomal membrane, lumen of endoplasmic
                                                            21;
   DB 1; Length 562;
                                                         241; Conservative 119; Mismatches 188; Indels
                                                                                                                        28 LCWS-LTLCLMAQTALGALHTKRPOVVTKYGTLQGKQMHVGK-
Score 1205.5; DB :
Pred. No. 2.9e-88;
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                            SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
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LIVER CARBOXYLESTERASE B-1.

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InterPro; ITRO00086; ER target_S.
InterPro; IPR000379; Serses_in.
Pfam; PP00115; Coesterase; in.
PROSITE; PS00014; ER TARGET; in.
PROSITE; PS00941; CARBOXVLESTERASE_B_1; 1.
PROSITE; PS00941; CARBOXVLESTERASE_B_2; 1.
Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum; Signal; Multigne family.
BY SIMILARITY.
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HSSP; P21836; 1MAA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
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MEDLINE=S6050819; PubMed=7961958;
Yan B., Yang D., Brady M., Parkinson A.;
Rat kidney carboxylesterase. Cloning, sequencing, cellular
localization, and relationship to rat liver hydrolase.";
J. Biol. Chem. 269:29688-29696(1994).
I- FUNCTION: INVOLVED IN THE DETOXIFICATION OF XENOBIOTICS AND
ACTIVATION OF ESTER AND ANDE PRODRIGS. HYDROLYZES OMICRON-
NITROPHENYL ACETATE AND ALPHA-NAPHTHYL ACETATE. IT ALSO
HYDROLYZES ACETAMILIDE AND, DISTINCTIVELY, PAMATTOYL-COA.
I- CAMALYTIC ACTIVITY: A carboxylic ester + H(2)O = an alcohol
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InterPro; IPRO12018; CarbesteraseB.
InterPro; IPRO12018; ER_target_S.
InterPro; IPRO1379; Ser_estrs.
Pfam; PF00135; Coesterase; 1.
PROSITE; PS00104; ER TARGET; 1.
PROSITE; PS00122; CARBOXYLESTERASE_B_1; 1.
PROSITE; PS00122; CARBOXYLESTERASE_B_2; 1.
Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum; Signal; Multigene family.
                                                                                                                                                                                                     054573; 062679; 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 01-NOV-1997 (Rel. 35, Last annotation update) 128-TBB-2003 (Rel. 41, Last annotation update) Liver carboxylesterase 4 precursor (EC 3.11.1) (Carbox (Microsomal palmitoyl-COA hydrolase) (Kidney microsomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-Sprague-Dawley, TISSUE-Liver,
MEDLINE-96190723; PubMed-8611161;
Robbi M., van Schaftlingen E., Beaufay H.;
"Cloning and sequencing of rat liver carboxylesterase if microsomal palmitcyl-CoA hydrolase).";
Biochem. J. 313:821-826(1996).
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EMBL; U10697; AAA64638.1; -.
PIR; S62788; S62788.
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Takagi Y., Morohashi K., Kawabata ƙ
Modlecular cloning and mucleotide ƙ
carboxyesterase El of rat liver.",
J. Biochem. 104:801-806(1988).
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus
                                                                                                             13;
                                                                                           tch 38.1%; Score 1184.5; DB 1; Length 561; al Similarity 41.7%; Pred. No. 1.3e-86; 234; Conservative 123; Mismatches 191; Indels 13;
I -> F (IN REF. 2).
G -> A (IN REF. 2).
D -> T (IN REF. 2).
D -> T (IN REF. 2).
D -> T (IN REF. 2).
T -> N (IN REF. 2).
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G -> B (IN REF. 2).
G -> B (IN REF. 2).
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AC P109D-9; Q61106; Q64626;
DT 01-011-1989 (Rel. 11, Created)
DT 01-NV-1997 (Rel. 35, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Liver carboxylesterase 1 precursor (EC 3.1.1.1)
DE (E1) (ES-THET).
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STRAIN-Sprague-Dawley, TISSUB-Liver;
MEDLINE-89174514; PubMed=3235453;
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its muse by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                           SEQUENCE OF 10-549 FROM N.A., AND PARTIAL SEQUENCE.
MEDLINE=89050119; Pubmed=2973315;
Long R.M., Saroh H., Martin B.M., Kimura S., Gonzalez F.J., Pohl L.R.;
"Rat liver carboxylesterase: cDNA cloning, sequencing, and evidence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in the
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J. Biol. Chem. 269:1718-17124(1994).

-!- FUNCTION: Involved in the decexification of xenobiotics and in the activation of ester and amide prodrugs.
-!- CATALYTICA ACTIVITY: A carboxylic ester + H(2)0 = an alcohol + a carboxylic anion.
-!- SUBCELLULAR LOCATION: Microsomal membrane, lumen of endoplasmic
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EMBL; D30620; BAA6310.1; -.

EMBL; D30620; BAA655.1; -.

EMBL; A31584; A31584.

HSSP; P21336; IMAH.

HSSP; P21376; IMAH.

HSSP; P21376; IMAH.

InterPro; IPR002019; Ser estre.

PROSITE; P500941; CARBOXYLESTERASE_B_1; 1.

PROSITE; P500941; CARBOXYLESTERASE_B_2; 1.

Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum;
S., Go M., Omura T.; sequence of cDNA of microsomal
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Pred. No. 8.9e-85;
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K -> E (IN REF. 1).
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STRAIN=Sprague—Dayley, TISSUE=Liver;
MEDLINE=94274701; PubMed=806016;
Alexson S.E.H., Finlay T.H., Hellman U., Svensson
                                                                                                                                                                                                                                                                                                                                                                                                                                                       for a multigene family.";
Biochem. Biophys. Res. Commun. 156:866-873(1988).
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MEDLINE=9169540; PubMed=1840565;

Ovnic M., Tepperman K., Medda S., Elliott R.W., Stephenson D.A.,

Ovnic M., Ganschow R.E.;

"Characterization of a murine cDNA encoding a member of the

carboxylesterase multigene family.";

Genomics 9:344-354(1991).

-I- FUNCTION: Involved in the detoxification of xenobiotics and in the

activation of ester and amide prodrugs.

-I- CATALITIT ACTIVITY: A carboxylic ester + H(2)O = an alcohol + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         carboxylic anion. SubCELLULAR LOCATION: Microsomal membrane, lumen of endoplasmic
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
 Indels
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01-WAR-1992 (Rel. 21, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Liver carboxylesterase precursor (EC 3.1.1.1) (PES-N)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   523
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WI--LCW-SLTLC-LMAQTAL-GALHTKRPQVVTKYGTLQGKQMHVGKTPIQVFLGVPFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGPFATGLSMGKEKALSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVG
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(POTENTIAL)
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LIVER CARBOXYLESTERASE.
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ss 190; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8A8260553DCC8F69 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1141.5; I
Pred. No. 3.5e-8
3; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        233; Conservative 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MIM
                                                                                                                                                                                                                                                                                                         EMBL; M57960; AAA63297.1; -.
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                             RKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRMMDIVQDATFVYATL 454
                                                                                                                                          EIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLP-YIMKFPLNRQAM 394
                                                                                                                                                                                                                                            514 LSLQMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGMKLKEKKMAFWMSLY
                                                                                                                                                                                                                                                                                                                                                                                        465 LSKOVVKYWANFARNGNPNGEGLPQWPAYDYKEGYLQIGATTQAAQXLKDKBVAFWIELW
                                                                                         455 QTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDEMYFLFGGPFATGLSMGKEKA
                                                                        RLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPE
                                                                                                                                                                   DOMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGIMMSPLASGLFHRAISQSGTALF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        novel putative carboxylesterase.";

Biochim. Biophys. Acta 1207:138-142(1994).

-!- FUNCTION: Involved in the detoxification of xenobiotics and in the activation of ester and amide prodrugs.

-!- CATALYTIC ACTIVITY: A carboxylic ester + H(2)0 = an alcohol + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Liver carboxylesterase precursor (EC 3.1.1.1).
Mesocricetus auratus (Golden hamster).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=Syrian golden, TISSUB=Liver;
MEDLINE=94318665; PubMed=8043605;
Sone I., Isobe M., Takabatake E., Wang C.Y.;
"Cloning and sequence analysis of a hamster liver cDNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  carboxylic anion. SUBCELLULAR LOCATION: Microsomal membrane, lumen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ź
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HSS:: P37967; 10E3.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00379; Ser_estrs.
Pfam; PF00135; COGETERAGE; 1.
PROSITE; PS00122; CARBOXYLESTERASE_B_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; D28566; BAA05913.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 --OSQRPEK 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      525 AKEAARPRE 533
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                                                                                                                 227
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EST1 MESAU
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                esterase from liver microsomal membranes.";
J. Biol. Chem. 262:1516-15321(1987).
-!- FUNCTION: Involved in the detoxification of xenobiotics and in the activation of ester and amide prodrugs.
-!- CATALYTIC ACTIVITY: A carboxylic ester + H(2)0 = an alcohol + a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98 WKGIRDATTYPPGCLQE--SWGQLASMYVSTRERYKWLRFSEDCLYLNVYAPARAPGDPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46 HTKRPQVVTKYGTLQGKQMHVGK-----TPIQVFLGVPFSRPPLGILRFAPPEPPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPVM/WFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDDSHARGNWGLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    reticulum.
-!- SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- SUBUNIT: Monomer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PREVENT SECRETION FROM ER (POTENTIAL).
N-LINKED (GLCNAC. ..).
N-LINKED (GLCNAC. ..).
                                                                                                                                                                         01-0CT-1989 (Rel. 12, Created)
01-0CT-1989 (Rel. 12, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Liver carboxylesterase 1 (EC 3.1.1.1).
0ryctoolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Moordeta; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSP; P21836; IMAH.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00319; Ser estrs.
Pfam; PF00135; COesterase; 1
PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00941; CARBOXYLESTERASE B 2; 1.
Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Isolation and characterization of a 60-kilodalton glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1133; DB 1; Length 539;
Pred. No. 1.6e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative 115; Mismatches 177; Indels
                                                                                                                                                                                                                                                                                                                                                                                          "Complete covalent structure of 60-kDa esterase isolated 2,3,7,8-tetrachlorodibenzo-p-dioxin-induced rabbit liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9BC72BC36A49B0BD CRC64;
                                                                                                                                                                                                                                                                                                                                       SEQUENCE, AND ACTIVE SITES SER-195 AND HIS-441.
MEDLINE-88139431; PubMed=3343253;
Korza G., Ozols J.;
                                                                                                                                        Ą.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY.
                                                                                                                                      539
                                              524 ORLKAEEVAFWTELLAKNPPE 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biol. Chem. 263:3486-3495(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1-70 AND 532-539.
MEDLINE=88033124; PubMed=3667634;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY
             559 MKLKEKKMAFWMSLYQSQRPE
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258
539
61
363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      carboxylic anion.
SUBUNIT: Monomer.
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363
539 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Glycoprotein;
ACT SITE 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         227;
                                                                                                                                          RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ozols J.;
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DISULFID
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Best Local
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the SMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIMKFPLNR 391
SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
STRAINE-BALB(CV X DBA/ZJ, TISSUB-Liver;
MEDLINE-93326638; PubMede-916639;
Aida K., Moore R., Negishi M.;
"Cloning and nucleotide sequence of a novel, male-predominant
carboxylesterase in mouse liver.";
Biochim. Biophys. Acta 1174:72-74(1993).
-!- FUNCTION: Involved in the deroxification of xenobiotics and in the
activation of ester and amide prodrugs.
-!- CATALYTIC ACTIVITY: A carboxylic ester + H(2)O = an alcohol + a...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64 PLPPQPWEGVRDASINPPMCLQDV-ERMSNSRFTLNEKMKIFPISEDCLTLNIYSPTEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123 AGDKRPVMVWIHGGSLRVGSSTSHDGSALAAYGDVVVVTVQYRLGIFGFLSTGDKHPRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEPPEPWKGIRDATTYPPGCLOESWGQLASMYVSTRERYKWLRFSEDCLYLNVYAPARAP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34 LCLMAQTALGALHTKRPQVVTKYGTLQGKQMHVGKTP--IQVFLGVPFSRPPLGILRFAP
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                                                                                                                                                                                                                                                                               reticulum.
-!- SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.

LIVER CARBOXYLESTERASE.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
PREVENT SECRETION FROM ER (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIRS. S34607; S34607.

HSSP, P37667; 10B3.

HSSP, P37667; 10B3.

HSSP, P37667; 10B3.

HSSP, P37667; 10B3.

InterPro; IPR002018; CarbesteraseB.

InterPro; IPR00379; Ser_estrs.

Pfam; P800132; CARBOXYLESTERASE B 1; 1.

PROSITE; P800941; CARBOXYLESTERASE B 1; 1.

PROSITE; P800941; CARBOXYLESTERASE B 2; 1.

ROSITE; P800941; CARBOXYLESTERASE B 2; 1.

ROSITE; P800941; CARBOXYLESTERASE B 1; 1.

PROSITE; P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

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PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLESTERASE B 1; 1.

PROSITE: P800941; CARBOXYLE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1034; DB 1;
No. 1.3e-74;
                                                                                                                                                                                                                                      carboxylic anion.
-!- SUBCELLULAR LOCATION: Microsomal membrane,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : 68
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61509 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                   LIVER CARBOXYLESTERASE.
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
BY SIMILARITY.
BY SIMILARITY.
PREVENT SECRETION FROM ER (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                              VGPLRFAPPEPPEPPEPWGGYRDGTSEPAMCLQTDFWRPQI-----SKERKIILPTISMSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199 GFLSTDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GFFSTGDEHARGNWGYLDQVAALHWVQQNIASFGGNPGQVTIFGVSAGGTSVSSLVVSPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259 ASGLFHRAISOSGTALFRLFITSNPLKV-AKKVAHLAGCNHNSTQILVNCLRALSGTKVM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242 SKGLFHGAIMQSGVALLPDLISDTPEAVYTPVVANQSGCEAKDSEALVHCLREKTEAEIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318 RVSNKMRFLQLNFQRDPEEIIWSMSP-VVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346 CGWGVPLFMGLDHVIKNITRETLPAFLKSRAEHMMLPPECSDLLMQEYMGDV--EDPQTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      437 RNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGI---IVKPRTDGADHGDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QAQFRELMKDFMFVIPALKVAYFQR-SHAPVYFYEFQHQSSFIKNKDARPSHVRADHGDH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29 CWSLTLCLMAQTALGALH---TKRPQVVTKYGTLQGKQMHV--GKTPIQVFLGVPFSRPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGILRFAPPEPPEPWKGIRDATTYPPGCLQESW--GQLASMYVSTRER---YKWLRFSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLYLINVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIF
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Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
NCBI_TaxID=10090;
[1]
                        Endoplasmic reticulum,
                                                                                                                                                                                                                                                                                                                         ; DB 1; Length 561;
1.1e-76;
                                                                                                                                                                                                                                                                                                                                                                     Mismatches 191; Indels
                                                                                                                                                                                                                                                                               48EA11E422475321 CRC64;
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01-NOV-1997 (Rel. 35, Last sequence update)
128-FEB-2003 (Rel. 41, Last annotation update)
11ver carboxylesterase precursor (EC 3.1.1.1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          554 AA.
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  PS00941; CARBOXYLESTERASE B 2; 1.
ein; Hydrolase; Serine esterase;
                                                                                                                                                                                                                                                                                                                         34.1%; Score 1060; 41.1%; Pred. No. 1.
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                                                                                                                                                                                                                                                                                  62330 MW;
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                        Glycoprotein, Hydrolase,
Signal, Multigene family
SIGNAL 1 27
CHAIN 28 561
                                                                                          561
227
122
122
291
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362
                                                                                                                                                                                                                                                                               561 AA;
                                                                                                                                                                                                                                                                                                                                               Similarity
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01-NOV-1997 (
28-FEB-2003 (
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ESTM MOUSE
AC 063880;
DT 01-NOV-1997
DT 28-FEB-2003
DE inver carbox
GN BE31.
CS Mus musculus
CC Eukaryota; M
CC Mammalia; EU
CO NGBI_TAXID=1
RN [1]
                                                                                                                                                                                                                                                                                                                                                 Best Local Sim
Matches 234;
                                                                                                              ACT SITE
ACT SITE
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SEQUENCE
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182 271 242

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1 AND 2), SEQUENCE OF N-TERMINUS, TISSUE WITH NEUREXIN 1-BETA; NEUREXIN 2-BETA AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIINE=2126491; PubMed=11329178; Gilbert M., Smith J., Roskams A.J., Auld V.J.; Gilbert M., Smith J., Roskams A.J., Auld V.J.; Gilbert M., Smith J., Roskams A.J., Auld V.J.; Gilbert M., Smith J., Roskams A.J., Auld V.J.; such J. Smith J., Roskams A.J., Auld V.J.; Gilbert M., Sis a vertebrate gliotectin expressed in the olfactory enheathing glia, a growth-promoting class of macroglia."; Gila 34:151-164(2001)
-!- FUNCTION: Neutronal cell surface protein thought to be involved in cell-cell-interactions by forming intercellular junctions through binding to beta-neurexins. Seems to play role in formation or maintenance of synaptic junctions. In vitro, triggers the de novo formation of presynaptic structures (By similarity).
-!- SUBUNIT: Interacts with neurexin 1-beta isoforms 3/Beta 4B5A and
                                                                         LQ----NLAIM----DQDVLLLHFTPPSIPMSEDCLYLNIXSPAHAREGSDLPVMVWIHG
                                                                                                                                                                           285 KVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPEEIIWSMSPV
                                                                                                                                                                                              ::
-----OVFMLIPGV
                                                                                                                                                                                                                                   345 VDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLBFNWLLPYIM-----KFPLNRQAMRK--E
                                                                                                                                                                                                                                                                                                                                                     HYHRDAGLPVYLYEFEH------HARGIIVKPRTDGADHGDEMYFLFGGP-FATG
                                                                                                                                                                                                                                                                                                                                                                                                                 506 LSM-GKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGMKLKEK
SEDCLYLNVYAPARAPGDPQLPVMVWFPG
                                                                                                                 QENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRLFITSNPL
                                                                                                                                              182 OKNIAHFGGNPGRVTIFGESAGGTSVSSHVLSPMSQGLFHGAIMESLVALLPGLITSSSE
                                                                                                                                                                                                                                                                                            398 TITKMIMSTRTLINITKEQVPLVVEEYLDNVNEHDWKMIRNRMDIVQDATFVYATLQTA
                                                                                                                                                                                                                                                                                                                                                                                   398 HLOR-SHAPTYFYEFQHRPSFTKDLRPPHVR-----ADHGDEVVFVFRSHLFGSK
                                                         GAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDDSHARGNWGLLDQMAALRWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             binding
                                                                                                                                                                                              242 VVSTVVANLSRCGQVDSETLVRCLRAKSEEEMLAIT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ichtchenko K., Nguyen T., Suedhof T.C.;
"Structures, alternative splicing, and neurexin
neuroligins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              836
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10-OCT-2003 (Rel. 42, Last sequence up
10-OCT-2003 (Rel. 42, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biol. Chem. 271:2676-2682(1996)
 LOESWGOLASMYVSTRERYKWLRF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Forebrain;
MEDLINE=96162010; PubMed=8576240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Mammalia, Eutheria, Rodentia, NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. (ISOFORMS SPECIFICITY, AND INTERACTION NEUREXIN 3-BETA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NLGN2.
Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuroligin 2 precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        511
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Q62888;
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                 QAMRKETITKMLWSTRTLL---NITKEQVPLVVEEYLDNVNEHDWKMLRNRMMDIVQDAT 448
                                              400
                                                                            507
                                                                                                       460
                                                                                                                                    559
                                                                                                                                                    TKYGTLQGKQMHVGKTP--IQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGC 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Isolation, properties, and the complete amino acid sequence of a second form of 60-kDa glycoprotein esterase. Orientation of the 60-kDa proteins in the microsomal membrane.", Isol. Chem. 264:12533-12545(1898).
                                   DKWEHLSQEDLLENSRPLLAHMQLPPEIMPTVIDEYLDNGS--DESATRYALQELLGDIT
                                                                                            101 LVIPTLIFSKYLQDAGCPVFLYEFQHTPSSFAKFKPAWVKADHSSENAFVFGGPFLTDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FVYATLQTAHYHRDAGLPVYLYEFEHHARGII-VKPRTDGADHGDEMYFLFGGPFATGLS
                                                                                                                                    ------MGKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLOLDFTTRVGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    carboxylesterase/lipase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBUNIT: Monomer.
SUBCELLULAR LOCATION: Microsomal membrane, lumen of endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLONAC. ..).
CS7DDD76A13A9C52 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; A34329; A34329.
HSSP; P37967; LOE3.
HSSP; P37967; LOE3.
InterPro; IPRO003018; Ser_estrs.
Pfam; PF00135; COesterase; 1.
PRO01125; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00941; CARBOXYLESTERASE B 2; 1.
Glycoprotein; Hydrolase; Serine esterase; Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               activation of ester and amide prodrugs. CATALYTIC ACTIVITY: A carboxylic ester + H(2)0 = an alcohol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 993; DB 1; Length 532;
Pred. No. 2.3e-71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 162; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PYRROLIDONE CARBOXYLIC ACID
                                                                                                                                                                                                                                                                                                                   P14943;
01-APR-1990 (Rel. 14, Created)
01-FBB-1994 (Rel. 28, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                  532 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -! - SIMILARITY: Belongs to the type-B
                                                                                                                                                                                              KLKEKKMAFWMSLYQSQRPEKQRQ 583
                                                                                                                                                                                                                        KLKKGRLOFWTETLPRKIQEWHRE 544
                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=89308686; PubMed=2745458;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85;
                                                                                                                                                                                                                                                                                                                                                                          Liver carboxylesterase 2 (EC 3 Oryctolagus cuniculus (Rabbit)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59058 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.9%;
larity 41.5%;
Conservative 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acid.
                                                                                                                                                                                                                                                                                                  STANDARD;
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253
529
249
532 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Similarity 226; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         reticulum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        idone
                                                                                                                                                                                                                                                                                                                                                                                        Oryctolagus
                                                                                                                                                                                                                                                                                                  RABIT
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MOD_RES
ACT_SITE
ACT_SITE
DISULFID
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Best Local
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | GLLDQWAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHRAISQSGT 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 WFTDNLEAAATYVQNQ-----SEDCLYLNLYVPTEDGPLTKKRDEATLNPPDTDIRD 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----PVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDDSHARGNW 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 ILGPUVQFLGVPYATPPLGARRFQPPEAPASWPGVRNATTLPPPACPQNLHGALPAIMLPV 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----ASMYVSTRERYKWLRFSEDCLYLNVYAPAR------APGDPQL-- 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQR 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30 WSLTLCLM----AQ------TALGALHTKR-PQVVTKYGTLQGKQMHVGKT 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70 ---piQVFLGVPFSRPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQESWGQL-----
                                                                                                                                                                                                                        -!- SIMILARITY: Belongs to the type-B carboxylesterase/lipase family.
4/Beta 4B5B. Interacts with neurexin 2-beta isoforms 3/Beta 4B5A
              4/Beta 4B5B, 7/Beta 4B5A6 and 8/Beta 4B5B6. Interacts with neurexin 3.beta. Probably interacts through its C-terminus with DLG4/PSD-95 third PDZ domain (By similarity). SUBCELLULAR LOCATION: Type I membrane protein (Potential). ALTERNATIVE PRODUCTS:
                                                                                                                                                                   IsoId=062888-2; Sequence=VSP 007533;
-!- TISSUE SPECIFICITY: Expressed in brain, spinal chord and dorsal root ganglion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROBABLE.

EXTRACELLUIAR (POTENTIAL).

POTENTIAL.

CYTOPLASMIC (POTENTIAL).

BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).

M-LINKED (GLCNAC. .) (POTENTIAL).

Missing (in isoform 2).

/FIIG-VSP_007533.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27.3%; Score 849; DB 1; Length 836;
llarity 33.2%; Pred. No. 1.3e-59;
Conservative 92; Mismatches 191; Indels 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1AD51CBIBE4BF9CF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                            Interpro; IPR002018; CarbesteraseB.
Interpro; IPR000460; Neuroligin.
Interpro; IPR000349; Ser_estrs.
PERM; PR00135; Coesterase; 1.
PRINTS; PR00190; NEUROLIGIN.
PROSITE; P800941; CARBOXYLESTERASE_B_2; 1.
Cell adhesion; Glycoprotein; Signal; Transmembrane; Alternative splicing.
                                                                                                 Event=Alternative splicing; Named isoforms=2;
                                                                                                                                   IsoId=Q62888-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 836 AA; 90961 MW;
                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U41662; AAA97870.1; -.
HSSP; P37967; 1QE3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 215; Conserv
                                                                                                                                                    Name=2;
                                                                                                                     Name=1
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TRANSMEM
DOMAIN
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:     ::      ::        :         ::	333 DPEBIIWSMSPVVDGVVIPDDPLVLLITQGKVSSVPYLLGVNNLE376	343 QPARYHIAFGPVVDGDVVPDDPEILMQQGEFLNYDMLIGVNQGEGLKFVEDSAESEDGVS 402	377ENWLLPYIMKFPLNRQAMRKETIIKMLMSTRTLLNITKEQVPLVVEEYLDNVN 429	403 ASAPDFTVSNFVDNLYGYDEGKDVLR-ETIKEMYTDWAD 440	430 EHDWKMLRNRMMDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGIIVKPRTDG 487	441 RDNGEMRRKTLLALFTDHQWVAPAVATAKLHADYQSPVYFYTFYHHCQAEGRPEWAD 497	488 ADHGDEMYFLFGGPFATGLSMGK-EKALSLQMMKYWANFARTGNPNDGNLP 537	MVGATDLFE	538CMPRYN-KDEKYLQLDFTTRVGMKLKEKKMAFWMSL 572	HIGLKPRVRDN
ДD	δ	g	λõ	qo	ογ	qq	δ	qa	δ	Пр

Search completed: August 3, 2004, 22:28:20 Job time : 15 secs

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Cauly home sapten George mas musculu Ce5136 mus musculu Ce5136 mus musculu Ce1034 felis silve P70104 cavia porce Ce4936 mus musculu Ce4936 mus musculu Ce4936 mus musculu Ce5497 mus musculu Ce7077 rattus norv Ce1077 rattus norv C726j1 home sapien C8109 mus musculu C8535 rattus norv C726j1 home sapien C8109 mus musculu C8530 mus musculu C8530 mus musculu C8530 mus musculu C8540 mus musculu C8540 mus musculu C8540 mus musculu C8540 mus musculu C8540 mus musculu C8540 mus musculu C8540 mus musculu C8540 mus musculu C8540 home sapien C72366 home sapien C7631 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv C8611 rattus norv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Liver;

TISSUE-Liver;

A STAURDER R. N. A.

A STAURDER R. A.

SUBMITTED R. B. C. THE EMBL/GenBank/DDBJ databases.

C -1 - SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.

REMBL; BCO26374, AAHASA74.1; -.

R GC; GC: 00.16787; F:hydrolase activity; IEA.

GC; GC: 00.16787; F:hydrolase activity; IEA.

R InterPro; IPR002018; CarbesteraseB.

R PROSITE; PS00122; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00122; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00121; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00122; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00141; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00141; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00141; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00141; CARBOXYLESTERASEB.; 1.

R PROSITE; PS00141; CARBOXYLESTERASEB.; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OL-UNA-2002 (TrEMBLrel. 21, Created)
Ol-UNA-2002 (TrEMBLrel. 21, Last sequence update)
Ol-UNA-2003 (TrEMBLrel. 25, Last annotation update)
Ol-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein.
BC026374.
Buta musculus (Mouse).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
OCEL_TaxID=10090;
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Tanigami A., Fujiwara T., Shibahara T., Goto Y., Hirao M., Shimizu F., Maringami A., Fujiwara T., Sato H., Goto T., Hishigaki H., Watanabe T., Ozaki K., Sugiyama T., Irie R., Ctuki T., Sato H., Matanabe T., Ozaki K., Sugiyama T., Armanoto J., Isono Y., Kawai-Hio Y., Satio K., Nishikawa T., Kimura K., Yamasahita H., Matsuo K., Nakamura Y., Sakine M., Kimura K., Yamasahita H., Matsuo M., Murakawa K., Kanehori K., Kakuchi H., Kanda K., Masuho Y., Nagai K., Isogai T., Takahashi-Puji A., Oshima A., Sugiyama A., Kawakami B., Suzuki Y., Takahashi-Puji A., Oshima A., Sugiyama A., Kawakami B., Suzuki Y., Takahashi-Puji A., Oshima A., Sugiyama A., Kawakami B., Suzuki Y., Takahashi-Puji A., Oshima A., Sugiyama A., Kawakami B., Suzuki Y., Subiyama A., Kawakami B., Suzuki Y., Subiyama A., Kawakami B., Suzuki Y., Subiyama A., Kawakami B., Suzuki Y., Subiyama A., Kawakami B., Suzuki Y., Subiyama A., Kawakami B., Suzuki Y., Nagai K., Isogai T., Submitted (JUL-2002) to the EMBL/GenBank/DDBJ databases.

Subiyami PRO94422.1, - Subiyami A., Sakima M., Kawakami B., Suzuki Y., REMBL, AKO9483; BAC04422.1, - Subiyami PRO9708; CarbesteraseB.

R InterPro: IPR000379; Ser estring B. Fami PR00135; Coesterase; I.s.
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01-0CT-2002 (TrEMBLrel. 22, Last sequence update)
01-0CT-2003 (TrEMBLrel. 25, Last annotation update)
Hypothetical protein FL/37464.
Hypothetical protein FL/37464.
Eukaryota, Metazca; Chordata, Craniata, Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Pred. No. 9.3e-156;
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PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.
Hypothetical protein; Hydrolase.
SEQUENCE 367 AA; 41851 MW; 95671668B6F
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                                                         218 MAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRL
                                                                                                MAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGLFHRAISQSGTALFRP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 HYHRDAGLPVYLYEFEHHARGIIVKPRTDGADHGDEMYFLFGGPFATGLSMGKEKALSLQ
                                                                                                                                                                      278 FITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPEEI
                                                                                                                                                                                                                            61 FITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVSNKMRFLQLNFQRDPEEI
                                                                                                                                                                                                                                                                                      IWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLPYIMKFPLNRQAMRKE
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Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Miyazaki M., Sai H., Taira H., Yamashita T.,
Miyazaki M., Sai H., Taira H., Yamashita T.,
Molecular cloning of the feline liver carboxylesterase.";
Submitted (OCT-2002) to the EMBL/GenBank/DDBJ databases.
EMBL, AB094147; BAC75712.1; -.
GO; GO:0003824; F:catalytic activity; IEA.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00379; Ser_estrs.
Pfam; PF00135; COesterase; 1.
   Indels
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PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00941; CARBOXYLESTERASE B 2; 1.
SEQUENCE 566 AA; 62231 MW; 4677D3F67205AD53 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Felis silvestris catus (Cat).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata,
Mammalia, Eutheria, Carnivora, Fissipedia, Felidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
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   Mismatches
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01-JUN-2003 (TrEMBLrel. 24,
01-JUN-2003 (TrEMBLrel. 24,
01-OCT-2003 (TrEMBLrel. 25,
Carboxylesterase.
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360 MWMGYPLSEDKLDQKTASSLLWKSYPIANIPEELTPLASEKYLGGTDDPVKK--KALFLD 417
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FLKGGASEEEIRLSKWMMKLWANFARSGNPNGEGLPSWPAYDQKEGYLQIGIPTQPAQKL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443 IVQDATEVYATLQTAHYHRDAGLPVYLYBFEHH-ARGIIVKPRTDGADHGDEMYFLFGGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGDEHGRGNWGHLDQLAALRWVQENIANFGGNPGSVTIFGESAGGESVSVLVLSPLAKNL
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LGPLRFAPPQAAEPWNFVKNTTSYPPMCSQDAVGGQVLSELFTNRKDNIPLKFSEDCLYL
                                                        NVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLS
                                                                                                                                                                            TDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              383 YIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRMMD
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Sone T., Takabatake E., Isobe M.;

"cDNA cloning and characterization of a monkey liver
T carboxylasterase.";

Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.

--- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMI
R EMBL; AB010633; BAA24523.1;

R EMBL; AB010633; BAA24523.1;

R GO; GO:0016789; F:Berine esterase activity; IEA.

R GO; GO:0016789; F:Berine esterase activity; IEA.

R InterPro: IPRO00379; CarbesteraseB.

R InterPro: IPRO00379; CarbesteraseB.

R PROSITE; PS0012; CARBOXYLESTERASE B 1; 1.

R PROSITE; PS0012; CARBOXYLESTERASE_B2; 1.

R HYDGOLASE; Signal.

T SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
carboxylesterase precursor (EC 3.1.1.1).
Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
Eukacyota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Cercopithecidae;
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566 CARBOXYLESTERASE.
62510 MW; 808040F1A4077297 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41.2%; Score 1282; DB 6;
45.3%; Pred. No. 2.8e-100;
live 116; Mismatches 177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 566 AA
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Matches 251; Conservative
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NCBI_TaxID=9541;
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INIYTPVDLRKKNRLPVMVWIHGGGLMVGGASTYSGLVLSAHENVVVVTIQYRLGIWGYF 179
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Hosokawa M., Suzuki K., Takahashi D., Mori M., Satoh T., Chiba K.;
"Purification, Molecular Cloning, and Functional Expression of Dog
Liver Microsomal acyl-CoA Hydrolase: A Member of the Carboxylesterase
Multigene Family";
                                                           STDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASG
                                                                                                                                                                                                                                    LFHRAISESGVALITALVKKDMKDAAQQIAFFAGCKNTTSAVTVRCLRQKTEEELLEISR
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Canis,
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-!- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE EMBL. AB02362; BAB60696.1; -
GO; GO:0016797; Fibydrolase activity; IEA.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00379; Ser_estrs.
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Eukaryota, Metazoa, Chordata, Craniata, Vertebrata,
Mammalia, Eutheria, Carnivora, Fissipedia, Canidae,
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Last annotation update)
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PROSITE; PSO0122; CARBOXVLESTERASE B 1; 1.
PROSITE; PSO0941; CARBOXVLESTERASE B 2; 1.
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                                                -----HPSSPPVVDTVHGKVLGKFV
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1- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.
EMBL, AB025027; BABSE566.1; -
GO, GO: 0016787; F: hydrolase activity; IEA.
Interpro; IPR002018; CarbesteraseB.
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Mammalia; Eutheria, Primates, Catarrhini; Hominidae; Homo.
NCBL_TaxID=9606;
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TSSUB-Brain;
HOSSKaw M., Mori M., Ogasawara Y., Komori C., Tsukada E.,
"CDNA cloning and expression of carboxylesterase isizymes
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                              WGHLDQLAALRWVQDNIASFGGNPGSVTIFGESAGGESVSVLVLSPLAKNLFHRAISESG
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     LMAQTALGALHTKRPQVV-TXYGTLQGKQMHV-GKT-PIQVFLGVPFSRPPLGILRFAPP
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Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases.
-- SUMILARIY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.
-- SUMILARIY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.
--- GO, GO:0016787; F:hydrolase activity; IEA.
--- InterPro; IPR002018; CarbesteraseB.
--- InterPro; IPR00319; Ser_estrs.
--- Family PF00115; Coesterase; I.
--- PROSITE; PS00122; CARBOXYLESTERASE B.; I.
--- PROSITE; PS00941; CARBOXYLESTERASE B.; I.
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Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
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566 Aa; 62269 MW; 3B86CBA1C42BAA0F CRC64;
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40.6%; Score 1265; DB 4; I
Best Local Similarity 43.2%; Pred. No. 7.9e-99;
Matches 252; Conservative 111; Mismatches 189;
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                                                                                                                                                                                                                                                                                                                                                                                 LRFAPPEPPEPWKGIRDATTYPPGCLQE--SWGQLASMYVSTRERYKWLRFSEDCLYLNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      384 IMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEBYLDNVNEHDWKMLRNRMMDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VQDATFVYATLQTAHYHRDAGLPVYLYEFEHH-ARGIIVKPRTDGADHGDEMYFLFGGPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGLSMGKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLQLDFTTRVGMKLK
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                                                                                                                                                                                                                                                                                                                                                         LCLMAQTALGAL - - - HTKRPQVV - TKYGTLQGK - - QMHVGKTPIQVFLGVPFSRPPLGI
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
carboxylesterase (EC 3.1.1.1) (Fragment).
Rattus norvegicus (Rat).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutheleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                 Gaps
  FAMILY
                                                                                                                                                                                                                                                                                                                 16;
  THE TYPE-B CARBOXYLESTERASE/LIPASE
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                              565 AA; 62291 MW; 0ACD61400CC81D2F CRC64;
                                                                                                                                                                                                                                                                      40.5%; Score 1260; DB 6; ilarity 43.8%; Pred. No. 2.1e-98; Conservative 119; Mismatches 180;
-!- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLIS EMBL; AF036920, AAC39258.1; -- PDB; 1K4Y; 0.1 MAY-0.2 GO; GO:0016787; F:hydrolase activity; IEA. GO; GO:0004759; F:scrine esterase activity; IEinterPro; IPR002018; CarbesteraseB. LinterPro; IPR00379; Ser_estrs. Pfam; PF00135; COSeteraseB. PROSITE; PS00122; CARBOXYLESTERASE B.; 1. PROSITE; PS00941; CARBOXYLESTERASE B.; 1.
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SEQUENCE FROM N.A.
STRAIN=Sprague-Dawley;
                                                                                                                                                                                                                                                                                               Similarity
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                                                                                                                                                                                                                                                                                                                     245;
                                                                                                                                                                                                               Hydrolase.
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                                                                                                                                                                                                                                                                                                                                                                                                                                             NIYTPADLTKNSRLPVMVWIHGGGLVVGGASTYDGLALSAHENVVVVTIQYRLGIWGFFS 179
                                                                                                                                                                                                                                                                                                                     LGILRFAPPEPPEPWKGIRDATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDCLYL 142
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360 MWMGYPLSEDXLDQXTASSLLMXSYPIANIPEELTPLASEXYLGGTDDVKK--KALFLD
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                                                                                                                                                                                                                                   WILCWSLTLCLMAQTALGALHTKRPQVVTKYGTLQGKQMHVG--KTPIQVFLGVPFSRPP
                                                                                                                                                                                                                                                                                                                                                                                                     NVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        323 MRFLQLNFQRDPEEIIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVMNLEFNWLLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           383 YIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRMMD
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                                                                                                                                                                                                                                                                           WL--FDLVLTSLATSMAWGYPSLPPVVDTVQGKVLGKYVSLEGFAQPVAVFLGVPFAKPP
                                                                                                                                                                                                                                                                                                                                              TDDSHARGNWGLLDQMAALRWVQENIAAFGGDPGNVTLFGQSAGAMSISGLMMSPLASGL
                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                           8
                                                                                                                                                     565;
                                                                                                                                                                                           Indels
                                                                                                                                                     Length
                                                                                                          61962 MW; E255244C2CAA9A1E CRC64;
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01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Liver carboxylesterase (EC 3.1.1.1)
Oryctolagus cuniculus (Rabbit).
                                                                                                                                                40.6%; Score 1264; DB 4;
44.7%; Pred. No. 9.6e-99;
tive 106; Mismatches 195;
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                    Pfan; PF00135; COESterase; 1.
PROSITE; PS00122; CARBOXYLESTERASE B 1;
PROSITE; PS00941; CARBOXYLESTERASE B 2;
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      InterPro; IPR000379; Ser estrs.
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Cancer Res. 58:2646-2651(1998)
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                                                                                                          565 AA;
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Local S.
250;
                                                                                      Hydrolase.
SEQUENCE
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, Metazoa;
Eutheria;
                                                              SEQUENCE FROM N.A
                              NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                    Hydrolase.
SEQUENCE
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             "Rattus norvegicus adipocyte carboxylesterase mRNA.";
"Sattus norvegicus adipocyte carboxylesterase mRNA.";
"Bubmitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
-1- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.
RR 1813 AF11640; AAD49369.1; -. TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.
RR 1813 AF10; AAD4140.
RR 1813 F. 10367.
RR 1814 AF1140; AAD4140.
RR 1815 P. 1814 AF1140.
RR 1815 P. 1816 AF1140.
RR 1816 AF1140.
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01-DEC-2001 (TrEWBLrel. 19, Created)
01-DEC-2001 (TrEWBLrel. 19, Last sequence update)
01-OCT-2003 (TrEWBLrel. 25, Last annotation update)
Carboxylic ester hydrolase (EC 3.1.1.1).
                                                                                                                                                                                                                                                                                                     DB 11;
                                                                                                                                                                                                                                                                                                                                       183;
                                                                                                                                                                                                                                                                     62130 MW; FDDB19F2C5DD4EC0
                                                                                                                                                                                                                                                                                                  Query Match
40.3%; Score 1254; DB 11
Best Local Similarity 42.8%; Pred. No. 6.8e-98;
Matches 240; Conservative 120; Mismatches 183
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 Lee W., Jung C.Y.;
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                                                                                                                                                                     Wallace T.J., Kodsi E.M., Langston T.B., Gergis M.R., Grogan W.M.;
"Mutation of Residues 423 (Met/Ile), 444 (Thr/Met), and 506 (Asn/Ser)
Confer Cholesteryl Esterase Activity on Rat Lung Carboxylesterase.
SER-506 IS REQUIRED FOR ACTIVATION BY CAMP-DEPENDENT PROTEIN KINASE.";
J. Biol. Chem. 276:33146-33174 (2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82 PPLGILRFAPPEPPWKGIRDATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDCL
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Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGF
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Local Similarity 42.8%; Pred. No. 1e-97;
ies 240; Conservative 119; Mismatches 184;
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PIR; A45140; A45140.

GO; GO:0016787; F:hydrolase activity; IEA.

GO; GO:0004759; F:serine esterase activity; IEA.

InterPro; IPR002018; CarbesteraseB.

InterPro; IPR000379; Ser_estrs.
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PROSITE; PS00122; CARBOXYLESTERASE B 1;
PROSITE; PS00941; CARBOXYLESTERASE B 2;
                                                                                                                         STRAIN=Sprague-Dawley; TISSUE=Lung;
MEDLINE=21413896; PubMed=11429416;
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Chordata; S
Rodentia; S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QRDPEELIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWLLP-YIMKFPL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    390 NRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNRMMDIVQDATF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEGQIDQKTAMSILWKSYPLVCIAKELIPEATEKYLGGTD--DTVKKKDLFLDLIADVMF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36 LMAQTALGALHTKRPQVV-TKYGTLQGK--QMHVGKTPIQVFLGVPFSRPPLGILRFAPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                       152 GDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFGFLSTDDSHARGN
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                                                                                                                                                                                     FAMILY.
                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                    TISSUE-Liver;
Islam M.R., Waheed A., Shah G.N., Tomatsu S., Sly W.S.;
"Human Egasyn Binds beta-Glucuronidase But Neither the Esterase Acti
Site of Egasyn Nor the C Terminus of beta-Glucuronidase Is Involved
Their Interaction.";
                                                              Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                     567;
                                                                                                                                                                        Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE
EMBL; AF177775; AAD53175.1; -.
                                                                                                                                                                                                                                                                                                                     DB 4; Length
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                                                                                                                                                                                                                                                                                                62448 MW; CC445067DC79EC59 CRC64;
                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                            187;
                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 44.7%; Pred. No. 2e-97;
Matches 248; Conservative 109; Mismatches 18
                                                                                                                                                                                                         HSSP; P21836; 1MAH.

G0; G0:0016781; Friydrolase activity; IEA.

InterPro; IPR002018; CarbesteraseB.

InterPro; IPR00379; Ser_estrs.

Pfam; PF00135; Coesterase; 1.

PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.

PROSITE; PS001941; CARBOXYLESTERASE B 2; 1.
           Created)
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         (TrEMBLrel. 1 (TrEMBLrel. 1 (TrEMBLrel. 2
                                                      (Human)
                                                                                                                                                                                                                                                                                                 567 AA;
                                                                                                           SEQUENCE FROM N.A.
                                                                                    NCBI_TaxID=9606;
         01-MAY-2000 (
01-MAY-2000 (
01-OCT-2003 (
                                                      Homo sapiens
                                                                                                                                                                                                                                                                                         Hydrolase.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LLPYIMKFPLNRQAMRKETITKMLWSTRTLLNITKEQVPLVVEEYLDNVNEHDWKMLRNR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81 RPPLGILRFAPPEPPEPWKGIRDATTYPPGCLQES-WGQLASMYVSTRERYKWLRFSEDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LYLNVYAPARAPGDPQLPVMVWFPGGAFIVGAASSYEGSDLAAREKVVLVFLQHRLGIFG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SNKMRFLQLNFQRDPELIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26 WI--LCWSLTLCLMAQTALGALHTKRPQVV-TKYGTLQGKQMHVG--KTPIQVFLGVPFS
                                                                                                                                                                                                                                                                                               arylhydroxamic acids.";
Submitted (MAY-1995) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.
HSSP; P21836; LMAH.
GO; GO:0016787; F:hydrolase activity; IEA.
GO; GO:0016787; F:serine esterase activity; IEA.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00379; Ser estrs.
Ffam: PF00135; Costerase; 1.
PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00941; CARBOXYLESTERASE B 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                              Mesocricetus auratus (Golden hamster).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
                                                                                                                                                                                                                                                                   novel
                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 565;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOXYLESTERASE. 8273233A59DF1ED0 CRC64;
            01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
Carboxylesterase precursor (EC 3.1.1.1).
Mascariantee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1247; DB 11;
Pred. No. 2.7e-97;
9; Mismatches 189;
 Ä.
 265
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PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 42.7%; Pr¢
Matches 240; Conservative 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62188 MW;
 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18
565
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                                                                                                                                                                   Mesocricetus.
NCBI_TaxID=10036;
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MEDLINE=22354683; PubMed=1246681;
The REANTOM CONSORTIUM.
The RIKEN Genome Exploration Research Group Phase I & II Team;
the RIKEN Genome Exploration Research Group Phase I & II Team;
the RIKEN Genome Exploration Research Group Phase I & II Team;
Than Parisis of the mouse transcriptome based on functional annotation of 60,770 full-length CDNAs.";
Nature 420:563-573(2002).
In Machine A20:563-573(2002).
EMBL; BCO19198; AAH19198.1;
EMBL; ARO78879; BAC37439.1;
                                                                                                                                  500 GPFAIGLSMGKEKALSLOMMKYWANFARTGNPNDGNLPCWPRYNKDEKYLOLDFTTRVGM
                                                                                                                                                                                                                                                  476 SPFLKDGASEEETNLSKMVMKFWANFARNGNPNGGGLPHWPEYDQKEGYLKIGASTQAAQ
                                                                                         441 MDIVQDATFVYATLQTAHYHRDAGLPVYLYEFEHHARGI-IVKPRTDGADHGDEMYFLFG
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Mammalia; Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         565 AA; 61787 MW; E85A9976F9916B34 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
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PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.
PROSITE; PS00941; CARBOXYLESTERASE B 2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MGD; MGI:2148202; Ces3.
GO; GO:0016787; F:hydrolase activity; IEA.
InterPro; IPR002018; CarbesteraseB.
InterPro; IPR00379; Ser_estrs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                565
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                                                                                                                                                                                                                                                                                                                                     578
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                                                                                                                                                                                                                                                                                                                                 560 KLKEKKMAFWMSL---YOSQRP
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20,
25,
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01-MAR-2002 (TrEMBLrel.
01-OCT-2003 (TrEMBLrel.
Carboxylesterase 3.
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Submitted (DEC-2001)
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SEQUENCE
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Best Local S:
Matches 243
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                                                               475 GSPFLKDGASEBEINLSKTVMKFWANFARNGNPNGGGLPHWPEYDQKEGYMKIGASVQAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178 FSTGDEHSRGNWGHLDQVAALRWVQDNIANFGGNPGSVTIFGESAGGFSVSVLVLSPLAK
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musinae; Musin
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Query Match

40.0%; Score 1244.5; DB 11; Length 565;
Best Local Similarity 43.2%; Pred. No. 4.4e-97;
Matches 243; Conservative 117; Mismatches 181; Indels 21;
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PROSITE; PSG0122; CARBOXYLESTERASE B 1; 1.
PROSITE; PSG0941; CARBOXYLESTERASE_B 2; 1.
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Triacylglycerol hydrolase (EC 3.1.1.1).
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                                                                                                   321 NKWRFLQLNFQRDPEELIWSMSPVVDGVVIPDDPLVLLTQGKVSSVPYLLGVNNLEFNWL 380
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Purification, molecular cloning and expression of cDNA encoding peroxisome proliferator inducible carboxylesterase isozymes from C57BL/6 mouse liver.";

C57BL/6 mouse liver.";

Submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases.

-1- SIMILARITY: BELONGS TO THE TYPE-B CARBOXYLESTERASE/LIPASE FAMILY.

RMCD; MGI:2148202; Ces3.

RGO; GO:0016787; F:hydrolase activity; IEA.

RO; GO:004789; F:serine esterase activity; IEA.

RITHERPO; IPR002018; CarbesteraseB.

RITHERPO; IPR00379; Ser_estrs.

RR PROSITE; PS00122; CARBOXYLESTERASE B 1; 1.

RR PROSITE; PS00121; CARBOXYLESTERASE B 1; 1.
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                                             GLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS
                                                                                                                             LKINLFKLDLLGNPKESYPFLPTVIDGVVLPKAPEEILAEKSFSTVPYIVGINKQEFGWI
                                                                                                                                                                                                                 441 MDIVQDATEVYATLQTAHYHRDAGLPVYLYEFEHHARGI-IVKPRTDGADHGDEMYFLFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21; Gaps
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STRAIN=CS7BL; TISSUE=Liver;
Hosokawa M., Nakamura T., Nakata F., Takahashi D., Sakae M., Satoh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI_TaxID=10090;
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Carboxylesterase MH1 (EC 3.1.1.1).
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RLKDKEVSFWAELRAKESAQRP 557
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                                                                                                                                                                                                                                                                261 GLFHRAISQSGTALFRLFITSNPLKVAKKVAHLAGCNHNSTQILVNCLRALSGTKVMRVS 320
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58 PPLGSLRFAPPQPAEPWSFVKNTTSYPPMCSQDAVGGQVLSELFTNRKENIPLQFSEDCL 117
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Pred. No. is the number of results predicted by chance to have a

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SUMMARIES

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Catarrhini, Hominidae, Homo.
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Kapeller-Libermann, R. and Silos-Santiago, I.
Methods of using 18903 to treat pain and pain-related disorders
Patent: WO 0244357-A 1 06-JUN-2002;
Millennium Pharmaceuticals, Inc. (US)
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AX469746.1 GI:21901868
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Homo sapiens
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Mammalia; Eutheria; Primates;
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qq	70 10	& g	දු දු	ζό q <sub>Ω</sub>	\$ 8	& 8 8	\$ B	<u>ک</u> 8	Qy Dp	ço g	ζζ G	ò a	Qy	& 8	Qy	8 S	S G	Qy Dp
Db 1538 GTCAAACCCCGCACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGC 1597	1501 CCCTTCGCCACAGGCCTTTCCATGGGTAAGGAGAAGGCACTTAGCCTCCAGATGATAA 1560 	1561 TACTGGGCCAACTTTGCCGGCACAGGAAACCCCAATGATGGGAATCTGCCCTGCTGGCCA 1620 	1621 CGCTACAACAAGGATGAAAGTACCTGCAGCTGGATTTTACCACAAGAGTGGGCATGAAG 1680 	1681 CTCAAGGAGAAGATGGCTTTTTGGATGAGTCTGTACCAGTCTCAAAGACCTGAGAAG 1740 	1741 CAGAGGCAATTC 1752 		LUCUS AX377796  DEFINITION Sequence 29 from Patent W00212467. ACCESSION AX377796  AX377796.1 GI:19573887	KEYWOKDS SOURCE Homo sapiens (human) ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Mammalla; butnerla; Primates; Catarrini; Hominidae; Homo. REFERENCE 1 AUTHORS Baughn, M.R., Bruns, C.M., Das, D., Delegeane, A.M., Ding, L., Elliot, V.S., Gandhi, A.R., Griffin, J.A., Hafalia, A.J., Khan, F.A.,		COURNAL FACENCY WO UZIZAGA, A 29 14-FB5-2002; FEATURES Location/Qualifiers 1. 2081	/organism="Homo sapiens" /mol_type="unassigned DNA" /db_xref="taxon:signed	ORIGIN  Query Match 100.0%; Score 1752; DB 6; Length 2081;  Best Local Similarity 100.0%; Pred. No. 0;  Matches 1752; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	CAGE STREET SECRET CAGE STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET	4 4 6	~	GGAAAACAGATGCATGTGGGGAAGACACCCATCCAAGTCTTTTAGGAGTCCCTTCTCC 24	AGACCTCCTCTAGGTATCCTCAGGTTTGCACCTCCAGAACCCCCGGAGCCCTGGAAAGA 30

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Qy         1381         CGAGATGCCGGCCTCCCTGTCTACCTGTATGAGTTTGAGCACCACGCTCGTGGAATAATC         1440           Db         1487         CGAGATGCCGGCCTCCCTGTCTATCGAATTTGAGCACCACGCTCGTGGAATAATC         1546           Qy         1441         GTCAAACCCCGCACTGATGGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGC         1500           Db         1547         GTCAAACCCCGCACTGATGGGCAGACCATGGGGATGAGATGTACTTCCTCTTTGGGGGC         1606           Qy         1501         CCCTTTGGCCACTGATGGGGAAGCCATGGGGATGAGATGTACTTCCTCTTTTGGGGGC         1606           Qy         1501         CCCTTTGGCCACTGATGGGGTAAGGAAGACACTTAGGCTCCAGATGAATAAA         1560	Db	177 CGCIACAAAAAAAAAAAAAAAAAAAAAAGCIGAATTITACCAAAAAAGGGGGGGGGG	AK833215  AK833215  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  LOCUS  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  AK833215  Homo sapiens  LOCUS  LOCUS  LOCUS  LOCUS  AK833215  ALTHORS  LOCUS  LOCUS  ALTHORS  LOCUS  ALTHORS  LOCUS  ALTHORS  LOCUS  ALTHORS  LOCUS  ALTHORS  LOCUS  ALTHORS  LOCUS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHORS  ALTHO	Masuho, Y.  TITLE Full-length cDNA sequences JOURNAL Patent: EP 1347046-A 39 24-SEP-2003; FEBTURES Location/Qualifiers Source 12178 Association for Biotechnology (JP) FEBTURES   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 According   J2178 Accordin	Ouery Match  Query Match  Query Match  Query Match  Best Local Similarity 96.1%; Score 1356.4; DB 6; Length 2178;  Batches 1423; Conservative 0; Mismatches 1; Indels 56; Gaps 1;  Matches 1423; Conservative 0; Mismatches 1; Indels 56; Gaps 1;  Qy 329 GGTGCCTGCAGGAGCCAGCTGGCCTGCATGTACGTCAGCAGGGGAACGGT 145  Be GGTGCCTGCAGGAGTCCTGGGGCCAGCTGGCTCAGTGACGTCAGCAGGGGAACGGT 145  Qy 389 ACAAGTGGCTGCGCTTCAGCGAGGACTGTTACCTGAACGTGTACGTCAGGGGGGGG

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1346 GAAGGCACTTAGCCTCCAGATGAAATACTGGGCCAACTTTGCCCGCACAGGAAACCC 1405   Oy   1593 CAATGATGGCATCTGCCCTGCCAGCTACAACGATGAAAAGTACCTGCAGCT 1652   Db   1406   CAATGATGGCAATCTGCCCTGCTGCTACAACAAGAAGATGAAAGTACCTGCAGCT 1655   Oy   1653 GGATTTTACCACAAGAGTGGGCATGAAAGAAGAAGAAGATGCTTTTTGGATGAG 1712   Op   1713 TCTGTACCACACAGAGTGAGAAGCTCAAGGAGAATTC 1752   Op   1713 TCTGTACCACTCTCAAAGAAGCAGAAGAATTC 1752   Op   1714 TCTGTACCACTCTCAAAGAAGCAGAAGAATTC 1752   Op   1715 TCTGTACCACTCTCAAAGAACAGAAGCAATTC 1752   Op   1716	RESULT 5 AK094783 LOCUS LOCUS LOCUS AK094783 LOCUS LOCUS HOMO Sapiens CDNA FLJ37464 fis, clone BRAWH2011795, weakly similar to LIVER CARBOXVLESTERASE PRECURSOR (EC 3.1.1.1). AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK094783.1 G1:21753911 AK088DBS SOURCE ORGANISM Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. BURARYOCTE, Makebe, H., Ono, T., Hishigaki, H., Watanabe, T., Caki, K., Shibahara, T., Goto, Y., Hirao, M., Shimizu, F., Wakebe, H., Ono, T., Hishigaki, H., Watanabe, T., Caki, K., Ishin, S., Yamachoto, J., Isono, Y., Kawal-Hio, Y., Saito, K., Ishikawa, T., Kannehori, K., Yamashita, H., Matsuo, K., Nakamura, Y., Sakine, M., Xikuchi, H., Kanashita, H., Matsuo, K., Nakamura, Y., Salto, K., Kanehori, K., Takahashi-Fujii, A., Oshima, A., Sugiyama, Y., Kanehori, K., Takahashi-Fujii, A., Oshima, A., Sugiyama, X., Kawakami, B., Suzuki, Y., Sugano, S., Nagahari, K., Masuho, Y., Nagai, K.	and 1809al.1.  TITLE NEDO human cDNA sequencing project JOURNAL Unpublished 1 to 2178)  Licase 1 to 2178)  AUTHORS Lisogai.T. and Yamamoto.J.  AUTHORS Lisogai.T. and Yamamoto.J.  TITLE Submitted (14-JUL-2002) Takao Isogai, FLJ Project (HRI Team); 2-6-7  Kazusa Kamatari, Kisarazu, Chiba 292-0812, Japan (E-mail:genomics@hri.co.jp, Tel:81-438-52-3975, Fax:81-438-52-3986)  COMMENT Research Association for Biotechnology (RAB); cDNA full insert sequencing: Research Association for Biotechnology (RAB); cDNA library construction: Hell:Research Institute (HRI) (supported by Japan Key Technology Center etc.); s'-e 3'-end one pass sequencing: RAB; HRI, and Biotechnology Center, National Institute of Technology and RAB: annotation: HRI and RAB.	FEATURES  Location/Qualifiers  1. 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8  Ly 21/8

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                                                                                                                                                                                                                                                   Contact: MGC help desk
Email: capbos-remail.inh.gov
Tissue Procurement: Jeffery E. Green, M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305
Web site:
Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAK Plate: 43 Row: c Column: 24 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 22122766. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACACCAAGAGGCCTCAAGTGGTCACCAAATATGGAACCCTGCAAGGAAAACAGATGCATG 196
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2599,
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/note="COesterase; Region: Carboxylesterase"
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Pred. No. 6.9e-217;
); Mismatches 415;
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db_xref="MGI:2384581"
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/mol_type="mRNA"
/strain="FVB/N"
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product="cDNA sequence
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Best Local Similarity 76.0
Matches 1321; Conservative
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         TITLE
JOURNAL
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Strausberg, R.L., Feingold, E.A., Grouse, L.H., Morge, J.G., Strausberg, R.L., Feingold, E.A., Grouse, L.H., Morge, J.C., Altschul, S.F., Zeeberg, B., Buetow, K.H., Schaefer, C.F., Bhat, N.K., Hopkins, R.F., Joxdan, H., Moore, T., Max, S.I., Wang, J., Hsieh, F., Diatchenko, L., Marusina, K., Farmer, A.A., Rubin, G.M., Hong, L., Scheetz, T.E., Brownstein, M.J., Usdin, F., Casavant, T.L., Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S., Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J., Abramson, R.D., Mullahy, S.J., Gunaratne, P.H., Richards, S., Worley, K.C., Hale, S., Garcia, A.M., Gay, L.J., Hulyk, S.W., Villalon, D.M., Sodergren, E.J., Lu, X., Glbbs, R.A., Villalon, D.K., Muthy, D.M., Sodergren, E.J., Lu, X., Glbbs, R.A., Buckern, R.J., Muthing, M., Madan, A., Young, A.C., Shevchenko, Y., Butterfield, X.S., Krzywinski, M., Touchman, J.W., Green, E.D., Dickson, M.C., Rodriguez, A., Grimwood, J., Schmutz, J., Myers, R.M., Butterfield, X.S., Krzywinski, M., Schein, J.B., Schein, J.E., Jones, S.J., and Marra, M.A., Schein, J.E., Jones, S.J., and Marra, M.A., Schein, J.E., Jones, S.J., and Marra, M.A., Roden, S.J., Roden, S.J., and Marra, M.A., Roden, S.J., Brock, M. Schein, J.E., Jones, S.J., and Marra, M.A., Schein, J.E., Jones, S.J., and Marra, M.A., Roden, S.J., Brock, S.J., Schein, J.E., Schiner, J.S., Straywinski, M., Schein, J.E., Solones, S.J., and Marra, M.A., Rode, Sci. U.S., 16899-16903 (2002)
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         TATCACCAAGGAGCAGGTACCACTTGTGGTGGAGGAGTACCTGGACAATGTCAATGAGCA
                                                                                                                                                              TGACTGGAAGATGCTACGAAACCGTATGATGGACATAGTTCAAGATGCCACTTTCGTGTA
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                                                                                          TGACTGGAAGATGCTACGAAACCGTATGATGGACATAGTTCAAGATGCCACTTTCGTGTA
                                                                                                                                                                                                                                                             TGCCACACTGCAGACTGCTCACTACCACGGGAGATGCCGGCCTCCCTGTCTACCTGTATGA
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Mus musculus
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BC026374.1 GI:20071335
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NGEGLPSWPANDQKEGYLQIGATTQPAQKLKOKEVAPWTELLAQGAAKKPPHKEHVEL
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Miyazaki, M., Sai, H., Taira, H. and Yamashita, T.
Direct Submission
Submitted (19-OCT-2002) Masao Miyazaki, Iwate University,
Department of Agro-bhosdience, Faculty of Agriculture; 3-18-8
Morioka, Iwate 020-8550, Japan (E-mail:cdg83700@par.odn.ne.jp,
Tel:81-19-621-6157, Fax:81-19-621-6177)
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Pred. No. 1e-82;
0; Mismatches 631; Indels 12;
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                                                                                                                                                                                                                Felis catus (cat)
Felis catus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Felidae;
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Organism="Felis catus"

/mol_type="mRNA"

/db_xref="taxon:9685"

/sex="male"
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QPVAFLGYVPRAKPPLGFLRFAFPQAREPWNYKNTTSYPPMCSQDAVGGQVLSELFT
NRKDNIPLKFSEDCLYLNIYTPADLTKNSRLPVMVWIHGGGLAVVGGASTYDGLALSAH
FRYNVYTIQYRLGIPFFSTGDEHGRGNWGHLDQLAALRWVQENIANFGGNPGSVTIF
GBSAGGESVSYLVLSPLAKNLFHRAISESGYALTAALVKKDMKDTAAQJANFGGNPGSTITSAVLVHCLRQKTEDELLEVSLKLKFFTLDLFGDPRESYPFLPTVVDGVLLFKMPQEI
TSAVLVHCLRQKTEDELLEVSLKLKFFTLDLFGDPRESYPFLPTVVDGVLLFKMPQEI
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LTEAASEKYTGGTDDPWKKALELDWGDVPGVPSVTVARHRDAGAPTYMTERQYH
PSFSSDMKPQTVGGTDBPWKKALELDWGDVFGASEETIRLSKMMKLWANFARSGNPW
GEGLPSWPAYDQKEGYLQIGIPTQPAQKLKSKEWAFWTELLAKRAAEKLSPTEHVEL
GAGATCAGACTCAGCAAGACGATGATGAAATTTTTGGGCCAATTTTTGCTCGGAGTGGGAAC 1597
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                                                                                   CTGGATTTTACCACAAGAGTGGGCATGAAGCTCAAGGAGAAGAAGAAGATGGCTTTTTGGA 1708
                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis.
                                                                                                                                                                                                                                                                                                                                                             dog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (11-FEB-1999) Masakiyo Hosokawa, Chiba University, Faculty of Pharmaceutical Sciences; 1-33 Yayoi-cho, Chiba, Chiba 263-8522, Japan (E-mail:masakiyo@p.chiba-u.ac.jp, Tel:81-43-290-2921, Fax:81-43-290-2921)
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Canis, familiaris
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/note="Dog liver carboxylesterase
/codon_start=1
/producft="carboxylesterase D1"
/protein_id="pha860656.1"
/do_xref="G1:14331125"
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larity 56.5%; Pred. No. 3.6e-82;
Conservative 0; Mismatches 657;
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Canis familiaris CESdD1 mRNA
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    (bases 1 to 1717)
    Potter, P.M.
    Direct Submission
    Submitted (02-DEC-1997) Molecular Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38105, USA Location/Qualifiers

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ELTPVATEKYLGGPDPVKKKDLFLDMLADLLFGVPSNNVARHRDAGARTYWESKYR
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Isolation and partial characterization of a cDNA encoding a rabbit
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Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
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/mol_type="mRNA"
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11. .1708
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Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLML at: http://image.llnl.gov Series: IRAK Plate: 21 Row: m Column: 7 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 16905523. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
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NGEGLPHWPEYNQKEGYLQIGANTQAAQKLKDKEVAFWTNLFAKKAVEKPPQTEHIEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QPVALFLGIDFAKPPLGPLRFTPPQPABPWSFVKNATSYPPMCTQDPKAGQLLSELFT
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GESAGGESVSVLVLSPLAKNLFPHRAISESGVALTSVLVKKGDVKPLAEQIAITAGCKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USH-MGC Project URL: http://mgc.nci.nih.gov
Contact: mGC help desk
Contact: mGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: DCTP/DTP/Gazdar
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
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Submitted (15-AUG-2001) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
Schnerch, A., Schein, J.E., Jones, S.J. and Marra, M.A. Generation and initial analysis of more than 15,000 full-length human and mouse cDMA sequences Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
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/note="COesterase; Region: Carboxylesterase"
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Pred. No. 2.6e-81;
0; Mismatches 632;
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24.4%;
Best Local Similarity 57.1%;
Matches 862; Conservative
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1 (bases 1 to 1975)

2 Strausberg, R.L., Feingold, E.A., Grouse, L.H., Derge, J.G.,

Rlausner, R.D., Collins, F.S., Wagner, L., Shenmen, C.M., Schuler, G.D.,

Altschul, S.F., Zeeberg, B., Buetow, K.H., Schaefer, C.F., Bhat, N.K.,

Hopkins, R.F., Jordan, H., Moore, T., Wax, S.I., Wang, J., Hsieh, F.,

Biatchenko, L., Marusina, K., Farmer, A.A., Rubin, G.M., Hong, L.,

Stapleton, M., Soares, M.M.B., Bonaldo, M.F., Casavant, T.L.,

Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S.,

Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J.,

Abramson, R.D., Mullahy, S.J., Bosak, S.A., McWan, P.J.,

Mockernan, K.C., Malek, J.A., Gunaratne, P.H., Richards, S.,

Vorley, K.C., Hale, S., Garcia, A.M., Gay, L.J., Hulyk, S.W.,

Villalon, D.K., Madan, M., Madan, A., Young, A.C., Shevchenko, Y.,

Sanchaz, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y.,

Butterifield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E.,

Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1518
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                                                                                                                         CCACTCTCTGAAGGCAAACTGGACCAGAAGACAGCTACAGAACTCTTGTGGGAAGTCCTAC 1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1226 ACAGATGACCTGTCAAAAGA-----AAGACTTGTTCCTGGACATGCTTGCAGATTTG 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1342 ACTITICGEGEATAGCCACACTGCACACTGCTCACTACCACCGAGATGCCGGCCTCCCTGTC 1401
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Homo sapiens carboxylesterase 1 (monocyte/macrophage serine esterase 1), mRNA (cDNA clone MGC:9220 IMAGE:3879691), complete
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BC012418.1 GI:15214584
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